ODE TO THE CHIA PET (p. 32) ~ RICHARD FORD GOES HOME (p. 95)

Smithsonian

SMITHSONIAN.COM { DECEMBER 2007 }

ETHIOPIAN ODYSSEY

Did Jesus and Mary once hide there?
Is the ark of the covenant there today?
Paul Raffaele investigates

Marseille's Melting Pot

Michael Korda on Ike at D-Day

Dinosaurs on Ice

Miami's Red-Hot Art Scene

Founding Fathers' Houses

If you saw the size of my grandson, you'd be impressed.

©2007 Citigroup Inc. Citi and Arc Design is a registered service mark of Citigroup Inc. Let's Get It Done is a service mark of Citigroup Inc.

New fishing pole **New best friend**

Three weeks ago I looked outside and said, "Today's the day I'm taking my grandson Brian fishing." So I fished out my Citi card to buy the worms, the sure-fire lures, and Brian picked out a brand-new rod. We spent a lot of time getting to know each other on that lake. And while we weren't able to reel in the Big One, it didn't matter. Because wouldn't you know it, I ended up getting hooked on an 8-year-old kid.

Whatever your story is, your Citi card can help you write it.

What's your story?

citi®

let's get it done℠

citicards.com

NO HASSLE
NO LINES
NO EMPTY SHELVES

LET DELL SIMPLIFY THE SEASON. Simple is better, especially during the holidays. So shop at Dell, we're making it easy for small businesses to make the most out of their year-end budgets. Make hassle-free purchases by phone, or order online with just a few clicks. No lines or empty shelves—just what you want available to ship right to your business. And when it comes to support, Dell's got you covered 24/7 with dedicated experts trained in small business. They can recommend the right technology, or offer helpful advice on how to keep your operations humming during your busiest time of year.

AMERICAN BRAND EXCELLENCE 2007

DELL IS THE #1 CHOICE FOR SMALL BUSINESS.*

To talk to a small business expert today, call
800.395.4270 or visit **DELL.COM/SimplifyBusiness**

SIMPLIFY THE SEASON

DELL

Dell names and logos are trademarks of Dell Inc. ©2007 Dell Inc. All rights reserved. *Based on a CBJN national survey of 1000 small and mid-sized business owners who evaluated 251 brands.

retirestronger.com

How do I love thee?

Let me count the ways.

I love thee to the depth and breadth and height

My soul can reach, when feeling out of sight

For the ends of Being and ideal Grace.

I love thee to the level of everyday's

Most quiet need, by sun and candlelight.

I love thee freely, as men strive for Right;

I love thee purely, as they turn from Praise.

– *Elizabeth Barrett Browning*

+5

marriage can add 5 years to your life

The AIG companies have the strength to be there when you retire, so you'll never outlive your money. Ask your financial advisor about AIG or call 877 AIG 0993.

live longer retire stronger℠

AIG THE STRENGTH TO BE THERE.®

Insurance and financial services are provided by subsidiaries of American International Group, Inc. (AIG).

*Estimated savings compares each U.S. HSD vehicle's EPA combined mpg rating with its segment average based on latest EPA Trends Report (driven 15k miles/yr). Actual mileage will vary. ©2007

CAN YOU HAVE AN IMPACT BY MAKING NONE AT ALL?

WHY NOT?

These are the kinds of challenges that motivate us at Toyota. This one was the inspiration for our zero emissions vision, not to mention our drive towards zero waste in all of our plants. Our goals may seem lofty but we've made significant progress. Like the fact that over one million Toyota and Lexus hybrids around the world have kept billions of pounds of CO_2 out of the atmosphere.* And as we make bigger leaps across all of our technologies, our impact on the environment will become even smaller.

toyota.com/whynot

NBCU 2008©

1968

WITH **TOM BROKAW**

2-HOUR TELEVISION EVENT

SUNDAY DEC. 9TH 9PM/8C

THE HISTORY CHANNEL®

History.com

Smithsonian features

{ DECEMBER 2007 · VOLUME 38, NUMBER 9 }

Art Basel has become one of the key events of the art-world calendar—a place where trends get set, deals get done and names get made.

"MIAMI SPLASH," PAGE 60

38 Keepers of the Lost Ark?

Christians in Ethiopia maintain that the chest said to hold the Ten Commandments resides there—and that Mary and Jesus visited the African country. Our reporter makes a pilgrimage of his own

TEXT AND PHOTOGRAPHS BY PAUL RAFFAELE

48 Ike at D-Day

In an excerpt from the best-selling new biography, Gen. Dwight Eisenhower comes to life, chain-smoking and all, in the hours leading up to one of the century's most pivotal moments

BY MICHAEL KORDA

60 Miami Splash

Each December, thousands of dealers, collectors, critics and curators descend on Florida's signature city for what has become the hottest trade fair under the sun: Art Basel Miami Beach

BY PHOEBE HOBAN

68 The Strange Lives of Polar Dinosaurs

Though dinosaurs may conjure up images of steamy climes, it turns out they also survived long, dark, icy winters. How? Paleontologists are starting to answer that question

BY MITCH LESLIE

76 Revolutionary Real Estate

A new book takes us inside the founding fathers' stately homes

BY HUGH HOWARD / PHOTOGRAPHS BY ROGER STRAUS III

86 Marseille's Ethnic Bouillabaisse

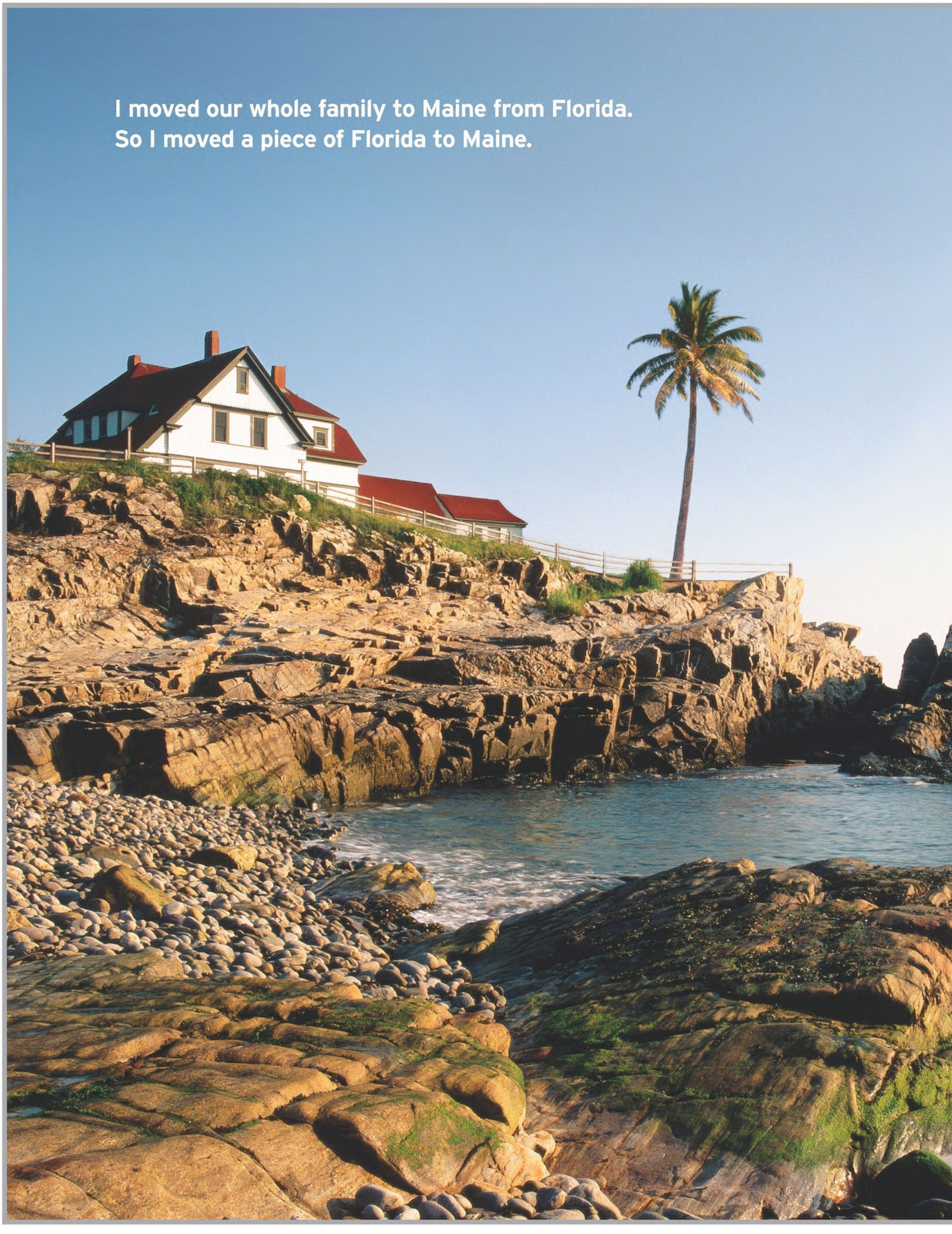
Forget its seamy "French Connection" reputation. When Paris erupted in violence, France's most diverse city kept its cool. It may even hold the key to Europe's growing immigration problem

BY ANDREW PURVIS / PHOTOGRAPHS BY KATE BROOKS

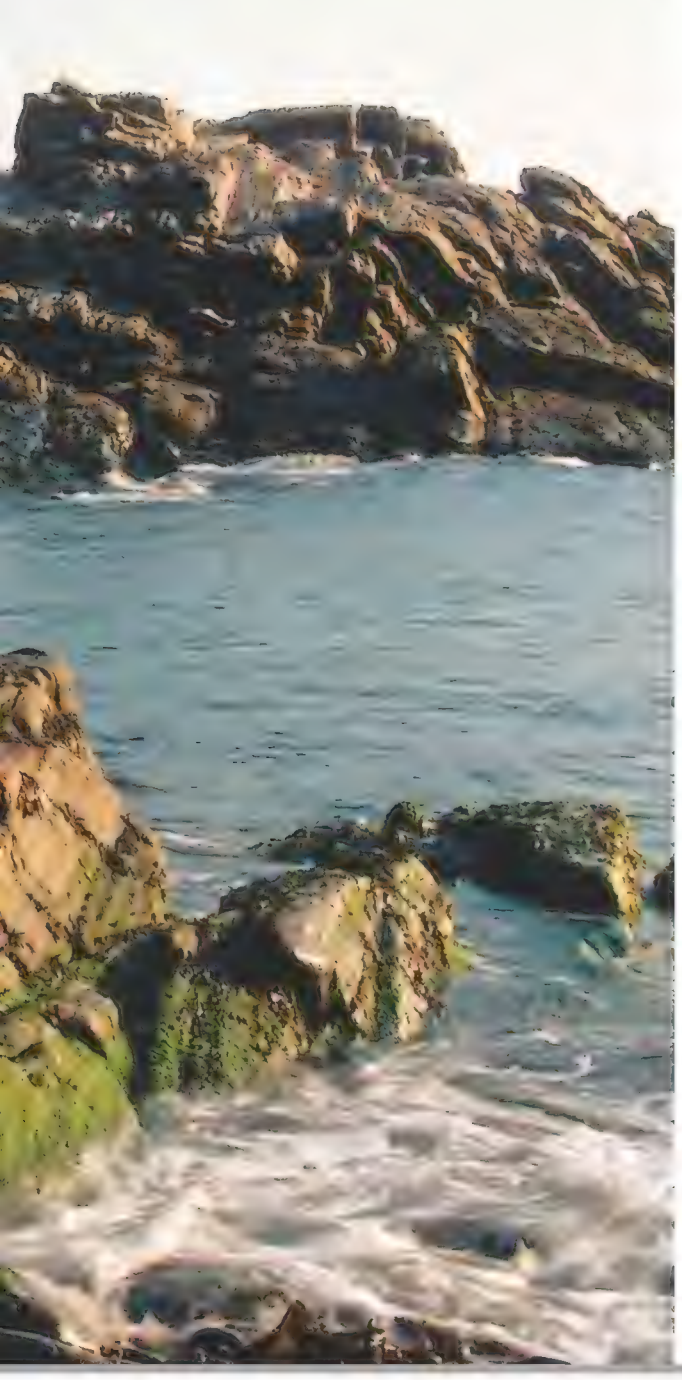
THIS PAGE: Last year, Art Basel Miami Beach attracted 40,000 people, and some 200 galleries displayed works at the convention center. Photograph by John Loomis.

COVER: Detail of central panel of a late-17th-century Ethiopian triptych with the Virgin and Child and archangels. Artist unknown. The Walters Art Museum, Baltimore.

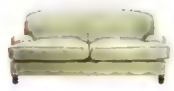
I moved our whole family to Maine from Florida.
So I moved a piece of Florida to Maine.



©2007 Citigroup Inc. Citi and Arc Design is a registered service mark of Citigroup Inc. Let's Get It Done is a service mark of Citigroup Inc.



Uprooting a tree **Putting down new roots**

After the move, I bought a new couch  with my Citi card. And a new rug. 5 lamps. And a secondhand car with 4-wheel drive.

But here's the thing—my daughters Jen and Sadie hadn't bought into the idea of moving to Maine. So since I had uprooted them from all their friends, I had the roots and everything else shipped 1,500 miles.

Now we have a little bit of Palm Beach, right off the coast of Portland. **Whatever your story is, your Citi card can help you write it.**

What's your story?

citi®

let's get it done℠

citicards.com

Smithsonian departments

{ DECEMBER 2007 · VOLUME 38, NUMBER 9 }

20 INDELIBLE IMAGES MARRIED, WITH CAMERA
Emmet Gowin's greatest subject is his wife
BY DAVID ZAX

95 MY KIND OF TOWN AT HOME. FOR NOW
What is home? For this novelist, it has nothing to do with roots or ancestors or even the past. At the moment, for him, the place is East Boothbay, Maine
BY RICHARD FORD

102 PRESENCE OF MIND BLAME THE RICH
Was it "triple-A" DNA, passed down through generations, that launched the Industrial Revolution?
BY RICHARD CONNIFF

13 FROM THE EDITOR KEEPING COOL
14 LETTERS
16 WILD THINGS
24 THIS MONTH IN HISTORY
27 AROUND THE MALL
120 THE LAST PAGE DOMESTIC BLISS

THIS PAGE: The Paca House in Annapolis (the second-floor porch chamber) was built between 1763 and 1765 by William Paca, a young, wealthy planter and signer of the Declaration of Independence. Photograph by Roger Straus III

VISIT SMITHSONIAN.COM Want more? Go to the magazine's Web site to explore new articles, photographs, videos, blogs and many other interactive features.

night night. lights out. hey this thing goes all the way flat. now i can sleep on my side. on my other side. on my - what's this? a duvet? what's a duvet? i don't know but man it's soft. and this pillow is plush. did i just say 'plush'? wow, i'm liking this new international business class on American.

Continue the experience at AA.com/flagship

We know why you fly®

AmericanAirlines®

Now available on select routes. AmericanAirlines, AA.com and We know why you fly are marks of American Airlines, Inc. **one**world is a mark of the **one**world Alliance, LLC.

Now on
Smithsonian.com

Issue Extras

Bones to Pick

Learn how paleontologist William Hammer digs up dinosaur fossils in the Antarctic at **Smithsonian.com/hammer**

5th Annual Photo Contest

Get focused. *Smithsonian* magazine calls for entries in all categories—The Natural World, Americana, Altered Images, Travel, People. Enter online today at **Smithsonian.com/photocontest**

Meet the Innovators

Each week *Smithsonian* magazine's young innovators ask the readers a question. Log on today and join the discussion at **Smithsonian.com/innovations**

The Kennedys: Portrait of a Family

Learn more about Richard Avedon's historic photo session with America's favorite first family, then view some of the never-before-published portraits at **Smithsonian.com/kennedy**

Web Exclusives

Sitting Bull's Legacy

Smithsonian's National Museum of Natural History returns Sitting Bull's lock of hair and wool leggings to his heirs. Read an interview with the Lakota Sioux leader's great-grandson at **Smithsonian.com/sittingbull**

For Hire: Truffle Hunter

Get the inside story on the hunt for one of the most expensive foods in the world at **Smithsonian.com/truffle**

Stay connected; sign up for regular e-mail updates at **Smithsonian.com/newsletter**

William Hammer's team searches for dinosaur fossils in the Antarctic.

WILLIAM HAMMER

Smithsonian Smithsonian.com

EDITOR
Carey Winfrey

ART DIRECTOR
Brian Noyes

EXECUTIVE EDITOR
Terence Monmaney

MANAGING EDITOR
Alison C. McLean

SENIOR EDITORS
Diane M. Bolz
Kathleen M. Burke
T. A. Frail
Laura Helmuth
Mark Strauss

CONTRIBUTING EDITOR
Robert M. Poole

SENIOR PHOTO EDITOR
Bonnie Stutski

COPY CHIEF
Karen Larkins

ASSOCIATE EDITORS
Lyn Garrity
Bruce Hathaway
Marian Smith Holmes
Lucinda Moore
Beth Py-Lieberman

ASSOCIATE ART DIRECTOR
Erik K. Washam

PHOTO EDITOR
Molly Roberts

ASSISTANT EDITORS
Helen Starkweather
Sarah Zielinski

ASSOCIATE PHOTO EDITOR
Brendan McCabe

ART SERVICES COORDINATOR
Jeff Campagna

ASSISTANT TO THE EDITOR
Andrea Georgiou

EDITORIAL ASSISTANTS
Megan Gambino
Michelle L. Strange

READER SERVICES
Karla A. Henry
Carolyn McGhee

INTERN
Jess Blumberg

EDITORIAL OFFICES:
MRC 513, Washington, D.C. 20013-7012
(202) 633-6090

SUBSCRIPTIONS:
(800) 766-2149
P.O. Box 420312
Palm Coast, FL 32142-0312
Smithsonian.com
Outside the United States:
(386) 447-2721

Views expressed by individual authors do not necessarily represent those of the Smithsonian Institution.

Sorry, but SMITHSONIAN cannot assume responsibility for unsolicited materials.

SMITHSONIAN BUSINESS VENTURES
Thomas Ott, ACTING CEO

BOARD OF DIRECTORS
Adolfo Marzol, CHAIRMAN
Frank A. Daniels, Jr.,
Alice Maroni, M. Ronald Ruskin,
Donald J. Steiner

PRESIDENT
Thomas Ott

EXECUTIVE ASSISTANT TO THE PRESIDENT
James A. Babcock

GENERAL MANAGER
Alan Chu

GROUP PUBLISHER
Kerry Bianchi

ADVERTISING
Marilyn Cruz, ADVERTISING SERVICES MANAGER
ACCOUNT MANAGERS
NEW YORK: Diantha W. Redd SALES DIRECTOR, Suzanne Grossman, Brian Layman MIDWEST: Bill Milligan, Lara Esquivel, Jeff Orr DETROIT: Colleen Maiorana, Holly Wilcox SOUTHWEST: Steve Moynihan, Lindsay Davis WEST COAST: Kate Knox, Charles Carroll FLORIDA: Colleen Schoch CARIBBEAN / CENTRAL AMERICA: Al Nadal MEXICO: Elsie Mendez Eriquez, Victor Ocadiz SOUTH AMERICA: Jorge Pflucker, Luis Barragan CANADA: Richard Brown, Cindy Ratych, David Seaberg LONDON: Graeme Brown JAPAN: Yoshinori Ikeda, Shigenori Nagatomo THAILAND: Yvan Van Outrive, Ja Pipatra KOREA: S.S. Song DIRECT RESPONSE: MI Media Services, LLC, Marie Isabelle

ADVERTISING ASSISTANTS
Blythe Graham-Jones
Amanda ReCupido

MARKETING
Rosie Walker, DIRECTOR
Christine Staley Corr, ASSOC. DIRECTOR OF SALES DEVELOPMENT
Laurie A. Corson, MARKETING MANAGER
Caitlin Glasheen McCarthy, ASSOCIATE MARKETING MANAGER
Karen Mendolia, PROMOTION MANAGER

RESEARCH
Renée Mitchell, DIRECTOR
Marilyn Resciniti, MANAGER

CONSUMER MARKETING
Lisa Dunham, CIRCULATION DIRECTOR
Elizabeth M. Hopkins, PLANNING DIRECTOR
Andrea Sole, FULFILLMENT DIRECTOR
Donald G. Dodd, FORECAST MANAGER
Suzanne L. Eng, PURCHASING MANAGER
Lori Paldino, DIRECT MAIL MANAGER
John O'Hare, MEMBERSHIP SERVICES COORDINATOR
Miriam Johnson, RENEWALS AND GIFT DIRECTOR
Joanne Marrero, GIFT MANAGER
Benjamin Shields, RENEWALS AND BILLING COORDINATOR
Laura E. Vichick, DIRECT MAIL COORDINATOR

ONLINE PUBLISHING GROUP
Emily Allen, DIRECTOR
BUSINESS OPERATIONS: Kelly Durkin, SENIOR WEB PRODUCER
Paula K. Burley, INTERACTIVE MARKETING MANAGER
Matthew Feldman, INTERACTIVE AD OPERATIONS COORDINATOR
Cheryl Carlin, JUNIOR PRODUCER
EDITORIAL: Cate Lineberry, WEB EDITOR
Eric Jaffe, ASSOCIATE WEB EDITOR
Nicole Wroten, INTERN

DIRECTOR OF PARTNERSHIP PROGRAMS
Christine Hoisington

MANUFACTURING
Sarah Kingsley, DIRECTOR
Greg Williams, POSTPRESS DIRECTOR
Katherine Balch, PREPRESS DIRECTOR
Frank Matthew Hale II, PREPRESS MANAGER
Marie Prete, PREPRESS MANAGER
Rahsaan J. Jackson, COLOR ANALYST
Steven Schwacke, COLOR ANALYST
Penie Atherton, AD SERVICES MANAGER

BUSINESS OFFICE
Ed Dequina, BUSINESS MANAGER
Beth Cunigan, ACCOUNTANT

HUMAN RESOURCES
Dana S. Moreland, ACTING DIRECTOR
Jennifer Alexander-Baylor, BUSINESS PARTNER
Sibyl Middleton, HR COORDINATOR
Jay Sharp, RECRUITER

MAIN ADVERTISING OFFICE:
420 Lexington Avenue, Suite 2335
New York, NY 10170
(212) 916-1300

SMILE!
YOU ARE IN MADRID

ESPAÑA

Celebrate the culture.

Turismo Madrid

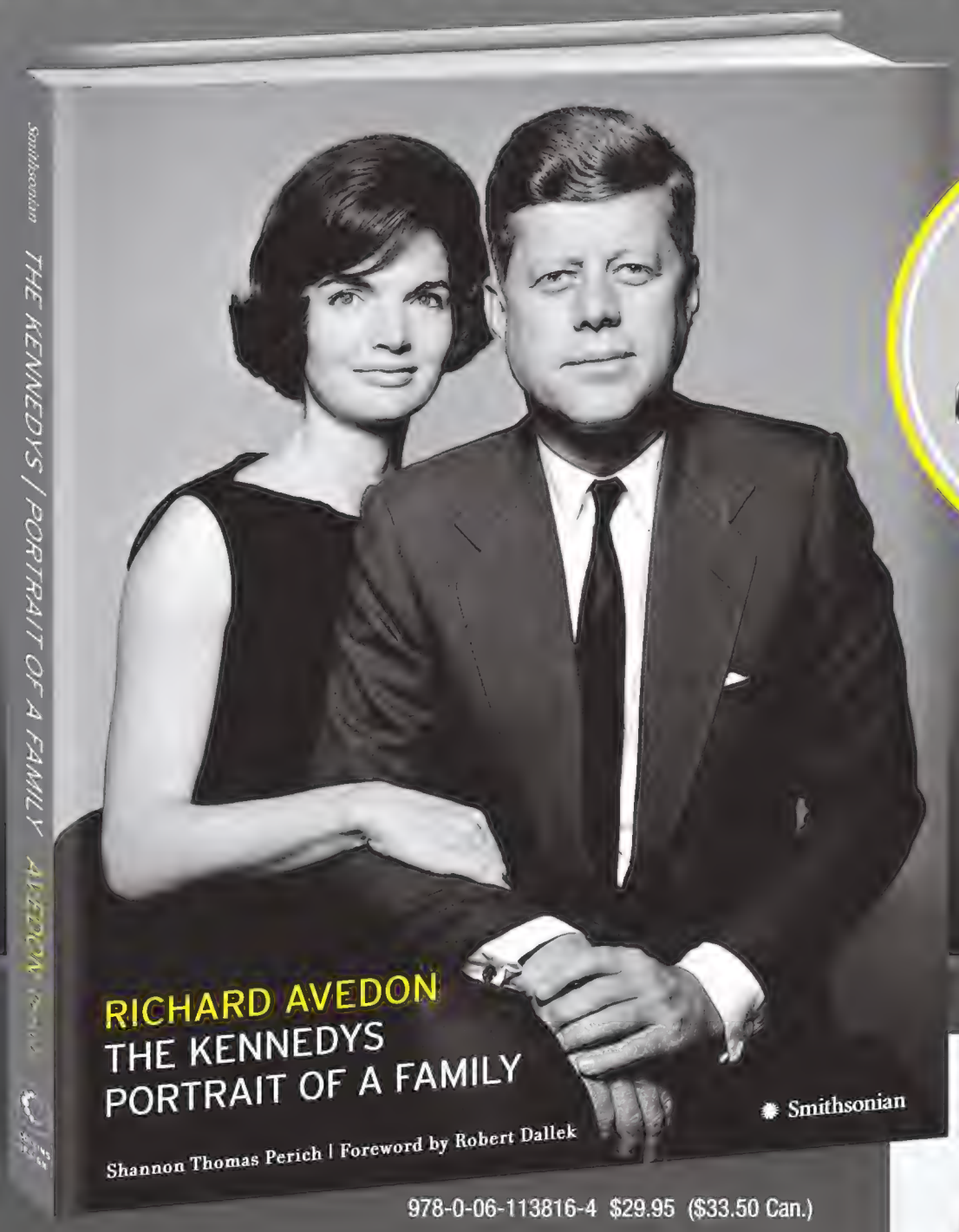
¡MADRID!

www.turismomadrid.es
www.esmadrid.com
www.spain.info

THE KENNEDYS: PORTRAIT OF A FAMILY

AVEDON'S intimate and never-before-published look at Camelot

from the collections of the Smithsonian's National Museum of American History



978-0-06-113816-4 $29.95 ($33.50 Can.)

As seen in *Vanity Fair* and on *Good Morning America*

Featuring a foreword by Robert Dallek, author of the bestselling *An Unfinished Life: John F. Kennedy, 1917-1963*

Written by
Shannon T. Perich, associate curator,
National Museum of American History

"When I wanted President Kennedy to play with Caroline, she stood on his lap while he held her by the knees and she leaned way forward and he would say, 'Let's pretend you're diving into the sea.'"

—RICHARD AVEDON

On Sale Now!

COLLINS | DESIGN
An Imprint of HarperCollins Publishers
www.harpercollins.com

Smithsonian

Available at SmithsonianStore.com, by calling 1-800-322-0344, or wherever books are sold.

FROM THE EDITOR

Keeping Cool

. . . In Cretaceous Australia and melting-pot Marseille **BY CAREY WINFREY**

MITCH LESLIE, who writes about cell biology and immunology for *Science* magazine, admits that before he got the assignment to report our dinosaur story ("The Strange Lives of Polar Dinosaurs," p. 68) he didn't know that the animals once lived in cold climates. "I was just as uninformed as most people about that," he says. He also didn't know that a dinosaur dig could be so, well, low-key. "I somehow imagined there would be people with picks and explosives, and it wasn't like that. The work is laborious, tedious. You sit around pounding on rocks all day and most of the time you don't find anything." At the center of Leslie's report is paleontologist Tom Rich and his Dinosaur Dreaming volunteers—a retired literature professor, a vacationing manager from an auto parts manufacturer, an owner of an environmental cleanup service, among others. What keeps them coming back for more is the hope they're going to find something. And they do. Rich and his troops have found 15 species of polar dinosaurs on Australia's southeastern coast.

Leslie: Tedious, laborious work

ANDREW PURVIS, who has covered immigration in Europe, among other things, for *Time* magazine, was interested in seeing a place that was "managing to cope with a large immigrant and specifically Muslim population in a positive way. Marseille has a huge immigrant population, and yet it seems to work. I wanted to find out why." One answer is the individuals and community leaders in and around Marseille who work with young people to prevent the kind of rioting that occurred elsewhere in France in 2005. Another is the intense pride residents take in their hometown, one that they are eager to share with visitors: "In Paris, you are sometimes resented for being an outsider. But I never had that feeling in Marseille." His report, "Marseille's Ethnic Bouillabaisse," begins on page 86.

THIS YEAR'S PHOTO CONTEST IS OUR FIFTH. Past finalists have ranged in age from 18 to 86, and grand prize winners have included a 60-year-old teacher from Malaysia and an 18-year-old high school senior from Minnesota. This year's contest will close on Thursday, January 3, at 2 p.m. EST. The five category winners will each receive $500, and the grand prize winner will get a four-day, three-night *Smithsonian Journeys* Grand Canyon Weekend Adventure for two, July 11-14, 2008, or the cash equivalent. All entries must be submitted online. For details and contest rules, please go to photocontest.smithsonianmag.com.

CHRISTIE ASCHWANDEN

ADVERTISEMENT

Become a Smithsonian Media Advisor!

JOIN THE

Smithsonian Media Group

ADVISOR PANEL

and be entered to win a Panasonic DVD Recorder/ VCR Combo!

AS AN ADVISOR PANEL MEMBER YOU CAN TELL SMITHSONIAN ABOUT

- what you read
- your interests
- your opinion of Smithsonian
- your online activity

Several times during the year, we may ask you to participate in an online survey. Your information will be kept strictly confidential and used only in combination with that of other survey respondents.

JOIN NOW!

- GO TO www.smithsonianresearchbiz.com
- FILL OUT the online Advisor Panel survey, submit your answers, and you'll be entered in our drawing to win a Panasonic DVD Recorder/ VCR Combo!

*Complete sweepstakes rules and prize details are located on the Smithsonian magazine web site. NO PURCHASE NECESSARY TO ENTER OR TO WIN. COMPLETION OF SURVEY NOT REQUIRED. Mail entrants accepted. Print your name, address and date on a 3.5" x 5" card and mail to: Smithsonian Advisor Panel, Mediamark Research, Inc., 75 Ninth Avenue, 5th Floor, New York, NY 10011.

LETTERS READERS RESPOND TO THE **OCTOBER** ISSUE

Gore Vidal evokes a now-lost moment when America was "aglitter in all of the arts" ("Salad Days"). But few in post-World War II America were voicing Vidal's sentiment. More apt was Cyril Connolly's 1949 remark: "It is closing time in the garden of the West and from now on an artist will be judged only by the resonance of his solitude or the quality of his despair." **STANLEY SANDLER,** SPRING LAKE, NORTH CAROLINA

GOLDEN DAYS FOR WHOM?

GORE VIDAL waxes nostalgic about Karl Bissinger's black-and-white photograph of himself and four friends dining at leisure in a quaint little garden outside Manhattan's Café Nicholson in 1949. "It perfectly evokes," he reminisces, "an optimistic time in our history that we are not apt to see again soon." Yet I am troubled that his text does not make the slightest reference to the black waitress (identified in the caption as Virginia Reed), who occupies a visual point of interest in this idyll. Compositionally, at least, she fills a gap between the two people on the left and the three on the right. I found myself wondering whether she shared Vidal's view about this time being so optimistic, whether she would welcome a revival of the society and culture in which this scene is embedded, whether she enjoyed a similar golden moment as the author and his friends did during lunches at Café Nicholson.

EDWARD WEINTRAUT
MACON, GEORGIA

NATURAL SCIENTIST

I NOTICED with great delight that Kathleen Anderson was featured in "Teaming up with Thoreau." Please note, however, that Anderson is not an "amateur" naturalist, as stated in the article. She is a naturalist of great distinction. In fact, she was the founding director of the Manomet Center for Conservation Sciences, mentioned in the article, and was responsible for training leading researchers in the field from 1969 to 1983. She is a recipient of the prestigious Arthur A. Allen Award, given by Cornell University's Laboratory of Ornithology, and an elected Fellow of the American Ornithologists' Union. She was honored recently by the Lloyd Center for the Environment for her conservation efforts. Frequently, age and gender, and labels such as amateur and professional, blind us to an individual's abilities and achievements. Anderson and other "amateurs" have had the vision and commitment to carefully record what they saw, which is the essence of being a scientist.

MARION WINGFIELD
EASTON, MASSACHUSETTS

DANCING *CATS*

IT IS IRONIC that Michael Walsh, the author of "The Curiosity of *Cats*," about Andrew Lloyd Webber's hit Broadway musical, never once mentioned the name of the show's choreographer, Gillian Lynne, despite referring to it as a "dance musical" five times and naming three other Broadway choreographers. You even ran a photograph depicting the special finale devised by Lynne for the night that her second Lloyd Webber hit, *The Phantom of the Opera*, surpassed her first, *Cats*, as the longest-running show in Broadway history. Although the article is about Webber, it would have been nice to give due credit to the choreographer.

RICHARD RISKIN
NEW YORK, NEW YORK

KETTERING'S LOGIC

ADD TO Richard Conniff's laws of social behavior ("The Last Page") one attributed to the inventor C. F. Kettering, which has kept me out of trouble many times: "Logic is an organized procedure for going wrong with confidence and certainty."

ROBERT H. PEET
NORTH CANTON, OHIO

CORRECTIONS:

AN ITEM IN "This Month in History" said the USS *Constitution* was launched 310 years ago. "Old Ironsides" is actually 210 years old. Another item misstated the date of Chief Joseph's death. The Nez Perce chief died September 21, 1904.

Please send letters to **LettersEd@si.edu** or to **Letters, Smithsonian, MRC 513, P.O. Box 37012, Washington, D.C. 20013.** Include a telephone number and address. Letters may be edited for clarity or space. Because of the high volume of mail we receive, we cannot respond to all letters. Send queries about the Smithsonian Institution to info@si.edu or to VIARC, Public Inquiry Mail Service, P.O. Box 37012, Washington, D.C. 20013.

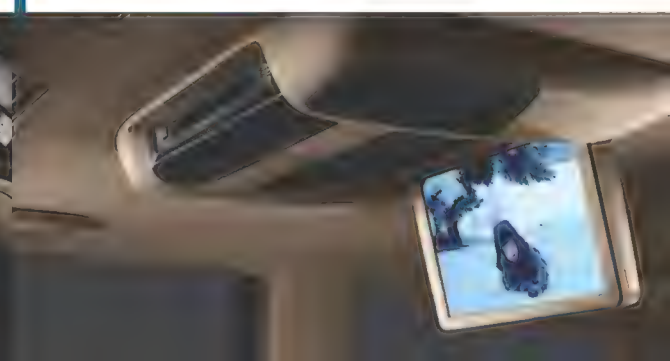
*MSRP excludes destination and delivery charges, tax, title and registration fees. Dealer sets actual price. 2008 Subaru Tribeca Transversal Limited with Alex Seat, DVD and GPS Navigation System pictured below has an MSRP of $37,160.

The all-new Tribeca® at subaru.com
Starting at $29,995†

Introducing HD AWD.

The all-new Subaru Tribeca. It has all the luxury. All the looks. All the size. All the power. And the safety of road-gripping All-Wheel Drive standard. Simply put, it's a higher definition of Subaru. Ready for more. **It's what makes a Subaru, a Subaru.**

SUBARU®



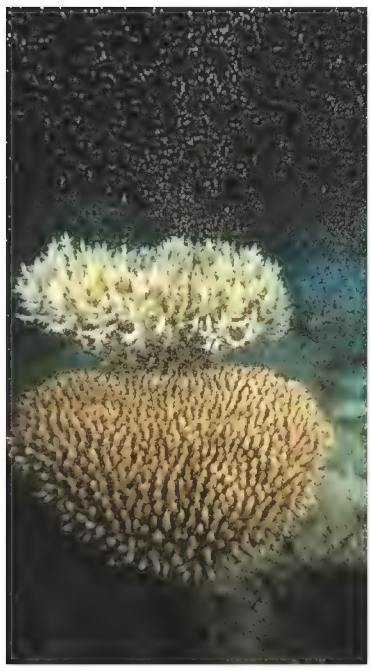
WILD THINGS

LIFE AS WE KNOW IT

BY JESS BLUMBERG, T.A. FRAIL, MEGAN GAMBINO, LAURA HELMUTH AND SARAH ZIELINSKI

DELIVERY ROOM

With 310,000 acres to roam, moose in Grand Teton National Park could easily avoid roads. But Joel Berger of the Wildlife Conservation Society found that pregnant female moose stay near roads during calving season at the end of May. At least, that's what they do if bears, which prey on calves, are at large. The reason: bears themselves shun automobile traffic, so cow moose, Berger speculates, have learned to use roads as "human shields."



TELLING TIME

Once a year, corals in the Great Barrier Reef spawn all at once, triggered by the full moon. How do they know it's time? Researchers from Australia and elsewhere now say the coral is guided by a protein that's sensitive to the moon's faint blue light; they call the protein a "precursor to eyes."

CYCAD SEX IS HOT

At midday, University of Utah scientists have found, male cones of Australia's *Macrozamia lucida* cycad heat up by more than 20 degrees Fahrenheit and emit toxic chemicals. That causes cone-eating bugs called thrips, which happen to be covered with male pollen, to flee—to cooler female cycad cones. Pollination accomplished.

ON A ROLL

Hungarian mathematicians who study the theory of how objects balance turned their attention to a real-world question: How does an upside-down turtle right itself? They found that a turtle with a tall shell simply waggles its head and feet to start rolling over. A flat-shelled turtle (here, a false map turtle) usually has a long, muscular neck with which it nudges itself upright. For a turtle, it turns out, geometry is destiny.

DAVE WELLING / DRR.NET; KELVIN AITKEN / ANTPHOTO.COM; WAYNE LAWLER / AUSCAPE; TIMEA SZABO; SHAWN GOULD

Observed

NAME: *Smilodon fatalis*, a saber-toothed cat that stalked North and South America until about 10,000 years ago.
BIG KITTY: About 350 to 600 pounds, maybe 4 feet in height, with canine teeth 7 inches long.
BAD KITTY: Bad enough to kill bison, horses, even mammoths.
WIMPY KITTY? New computer modeling by researchers in Australia shows that the cat's bite was only one-third as forceful as a modern lion's.
BIG, BAD KITTY: The finding won't erase "fatalis" from the cat's name. Rather, it advances a 150-year quest to learn how the animal killed. Unlike a lion, whose jaws exert a deadly "clamp-and-hold" grip, the sabercat apparently used its powerful body to fell prey before finishing it off with a stabbing bite.

BOSE®
Better sound through research®

Get the full home theater experience with Bose® sound.

The creak of a floorboard behind you. The roar of a crowd around you. It's sound that brings movies, sports and music to life. Bose Lifestyle® home theater systems are engineered with unique technologies to reproduce sound with vivid detail. Because room size, shape and furnishings can make even the most expensive system sound like one worth half the price, Lifestyle® systems customize the sound to fit your room. So you hear rich, accurate surround sound. Plus, they can be expanded to deliver music throughout your home, even outdoors. Hear one of our premium home theater systems for yourself, and you may be surprised by what you've been missing.

NEW **Lifestyle® 48** Series IV
DVD home entertainment system

Designed for those who want a complete entertainment system. Includes built-in DVD/CD player, up to 340 hours of music storage and patented uMusic® intelligent playback system.

NEW **Lifestyle® V30** home theater system

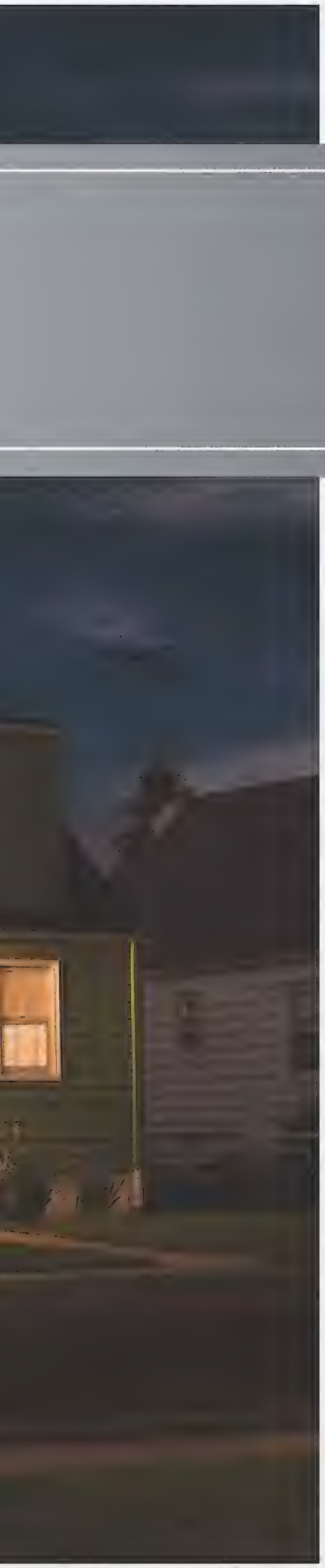
Designed for those who want to select their own DVD player and other entertainment sources. Makes it easy to connect multiple audio and video components, and then hide them from sight.

1-800-434-2073, ext.5051 Bose.com/lifestyle

Call or visit us online. And discover why Bose is the most respected name in sound.

©2007 Bose Corporation. Patent rights issued and/or pending. The distinctive design of the Lifestyle® media center is also a registered trademark of Bose Corporation. C_000337

SHE OWNS A HOUSE IN PALM BEACH. A VILLA IN ST. BARTS. A CONDO IN SUN VALLEY. YET, A PIECE OF HER STILL LIVES ON A CUL-DE-SAC IN OHIO.



Who's to say how it happened. A big idea.
A gutsy work ethic. A lucky break here
and there. And yet there's one thing you know
for certain. If it wasn't for where you came
from, you might not be where you are today.
With a keen understanding of the things that
truly matter to you, we offer a personal
approach to structuring and managing wealth,
designed to maximize opportunity and
backed by a depth of financial and intellectual
capital rooted in over 200 years of experience.

WEALTH MANAGEMENT
FOR TODAY'S WEALTH.

WEALTH STRUCTURING
INVESTMENT MANAGEMENT
CREDIT AND BANKING
LEGACY AND PHILANTHROPY
MULTI-FAMILY OFFICE

U.S. TRUST

Bank of America Private Wealth Management

U.S. Trust, Bank of America Private Wealth Management operates through Bank of America, N.A., and United States Trust Company, N.A., which are wholly owned subsidiaries of Bank of America Corporation. Bank of America, N.A. and United States Trust Company, N.A., Members FDIC. © 2007 Bank of America Corporation. All rights reserved.

Married, With Camera

Portraitist Emmet Gowin's most enduring subject is his wife

BY DAVID ZAX

HE WASN'T LIKE the other Danville boys, Edith recalls. He looked sharp that night in 1961, clad entirely in black for the dance at the Y; later, she learned that he listened to jazz and classical music. Emmet Gowin wanted to be an artist but was having trouble finding a subject. In Edith Morris, he did. They married three years later, and Gowin went on to make his first photographs of Edith and her extended family.

It was a welcoming family, and a large one, clustered in five houses on a Danville, Virginia, cul-de-sac. By 1971, when this picture was taken, Edith and Emmet had the first of their two sons, Elijah (playing with a train set), and five nephews and nieces (one of whom appears in a blur near the train tracks). Each year, gifts for nearly 20 people would be piled at the foot of a Christmas tree, a young cedar that Emmet would cut from the nearby woods. By mid-morning, the living room floor would be a wasteland of torn wrapping paper. "It would pretty much look like that every Christmas," Edith remembers.

Neither Edith nor Emmet can recall the precise circumstances that led to this photograph, but they know the process well. "She'll look at me and see the way I'm looking at her, and she'll know," he says. "I don't even say anything, I just get up and go get the camera."

"What he'll do is just stare a little bit," she says, "and I know to keep the feeling I have there, whether it's a solemnness or whether it's a glee in my eye—whatever it is, to not get into another mood."

"She'll look at me and see the way I'm looking at her, and she'll know," Gowin says. "I just get up and go get the camera."

He recalls climbing into the treehouse: "Just getting up to a high place changed and liberated your vision."

Gowin says his landscapes (above, *Pivot Agriculture, Washington, 1987*) are about "tracing out all the lines humans have etched." But the sustaining thematic arc of his career has been his portraiture of Edith (right, with Emmet in 2004).

Other photographers have taken their spouses as subjects. Gowin's mentor at the Rhode Island School of Design, Harry Callahan, made abstract pictures of his wife, Eleanor; Alfred Stieglitz said the countless pictures he took of Georgia O'Keeffe formed a single portrait. But Gowin's pictures—with Edith's characteristically defiant, tomboyish air, often tempered by an ethereal light—are anything but derivative. The couple's collaboration launched a distinguished career: Gowin's family photographs earned him fellowships from the Guggenheim Foundation and the National Endowment for the Arts, and his work has been published in three monographs and featured in numerous museum collections. For the past 34 years, he has taught at Princeton University.

For many years Gowin was content to take pictures mostly of Edith and her family, but that began to change in the early '70s, with the deaths of Edith's grandmother and two of her uncles. With three of his most beloved in-laws gone, Gowin felt diminished.

When he returned to visit with Edith's family for Christmas in 1973, he saw that some of the children had built a treehouse in the yard. "I just out of curiosity climbed up," he says. "One plank had fallen out, and right in that spot there was a marvelous view, about 12 or 15 feet off the ground." He wedged his camera through the gap and took the only picture possible. It turned out to be a beautiful image, framed by snow-covered branches, looking out at the home of Edith's deceased grandmother. He remembers feeling that "just getting up to a high place changed and liberated your vision."

That picture became the bridge between Gowin's early work and the sort of photography that has absorbed him for the past few decades. Since 1980, he has devoted himself largely to aerial landscapes—strip mining in the Czech Republic, farm fields in Kansas, apartment complexes in Jerusalem. These photographs, without a human being in sight, might seem a radical departure, but Gowin says no, they are "records of human action." He is not interested in photographing pristine wildernesses, he adds, but in "tracing out all the lines humans have etched" in the land.

And though Gowin's focus has shifted, he has never stopped photographing Edith, who is now 64, nor does he intend to. "I wanted to pay attention to the body and personality that had agreed out of love to reveal itself," Gowin wrote in 1976. Now, at age 65, he says, "My life as an artist follows so closely my meeting Edith and my love for her that I can think of no way of seeing these two separately."

Former SMITHSONIAN *intern* **DAVID ZAX** *is a writing fellow at* Moment *magazine.*

EMMET AND EDITH GOWIN / PACE MACGILL GALLERY, NEW YORK; EMMET GOWIN COLLECTION; PP. 20-21 EMMET AND EDITH GOWIN / PACE MACGILL GALLERY, NEW YORK

WE'RE THE LITTLE GEEK WHO ALWAYS WINS THE TECHNOLOGY FAIR.

THE OTHER CAMERA COMPANIES ARE BETTER THAN US AT MARKETING. WE PREFER TO SPEND OUR TIME DESIGNING AND BUILDING BETTER CAMERAS. SO EVEN THOUGH WE HAVE ONE GAZILLIONTH THE BUDGET OF THE BIG CAMERA COMPANIES, OUR NEW K10D HAS WON MANY MAJOR AWARDS FOR THE MOST ADVANCED DSLR PRICED UNDER $1,000. WHY? IN-CAMERA SHAKE REDUCTION, 10.2 MEGAPIXEL CCD, A RUGGED WEATHER AND DUST RESISTANT BODY. BUT NO TIME TO GLOAT, WE HAVE TO GET BACK TO THE LAB.

BIG PASSION FROM A SMALL COMPANY. MEET US AT PENTAXSLR.COM

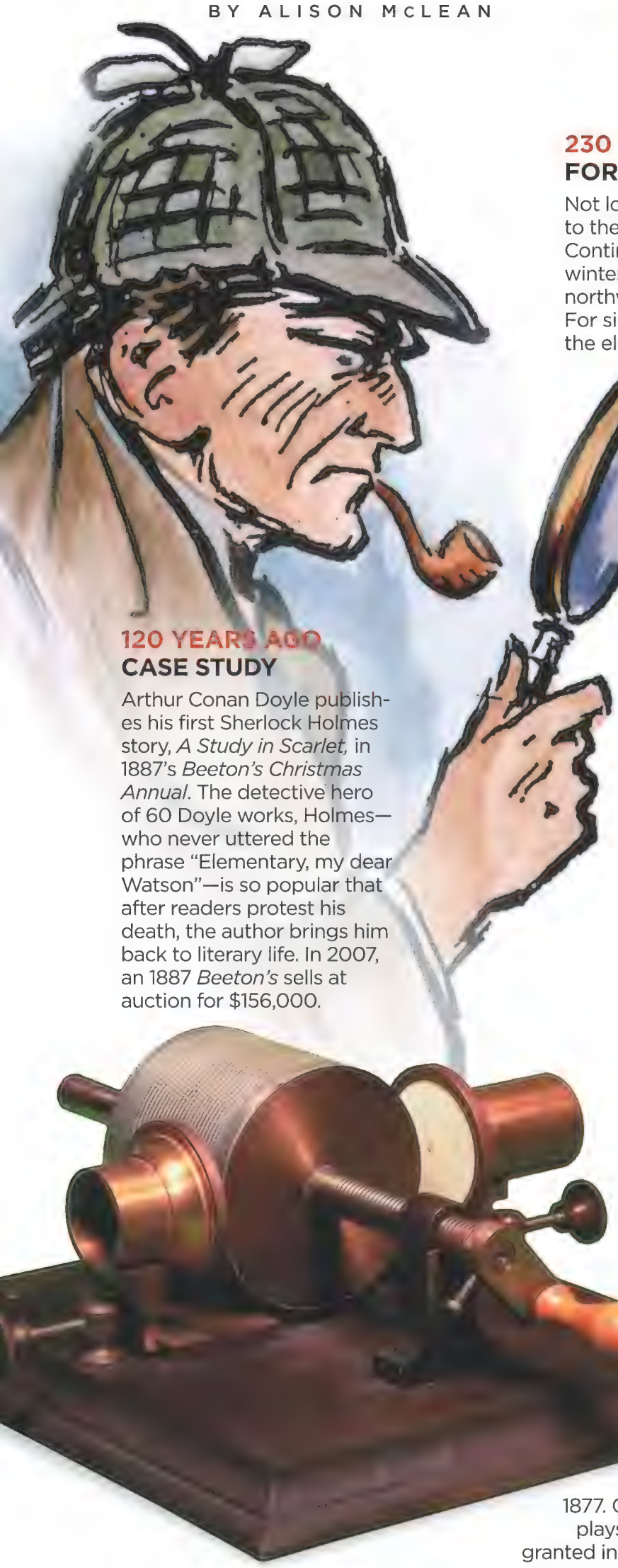
PENTAX®

© 2007 PENTAX Imaging Company. All rights reserved

THIS MONTH IN HISTORY

DECEMBER ANNIVERSARIES
MOMENTOUS OR MERELY MEMORABLE

BY ALISON McLEAN



120 YEARS AGO
CASE STUDY

Arthur Conan Doyle publishes his first Sherlock Holmes story, *A Study in Scarlet,* in 1887's *Beeton's Christmas Annual*. The detective hero of 60 Doyle works, Holmes—who never uttered the phrase "Elementary, my dear Watson"—is so popular that after readers protest his death, the author brings him back to literary life. In 2007, an 1887 *Beeton's* sells at auction for $156,000.

230 YEARS AGO
FORGING FIGHTERS

Not long after losing Philadelphia to the British, George Washington's Continental Army encamps for the winter at Valley Forge, 20 miles northwest, on December 19, 1777. For six months, 12,000 men battle the elements, illness and supply shortages; build 2,000 log huts; and train for future encounters. By June, 2,000 are dead, but the rest emerge, well drilled, to rout the Brits at the Battle of Monmouth.

60 YEARS AGO
SMALL WONDER

Bell Labs physicists John Bardeen and Walter Brattain wire plastic, a paper clip, gold foil and germanium to a power source to create the first transistor, December 23, 1947. When their boss, William Shockley, makes improvements, transistors, smaller and sturdier than the vacuum tubes they replace, lead to ever smaller electronics, computers and the semiconductor industry. The trio share the Nobel Prize in Physics in 1956.

60 YEARS AGO
STELLLLAAA!

Tennessee Williams' drama of class conflict and self-deception, *A Streetcar Named Desire*, opens on Broadway December 3, 1947. Critics hail Williams' sympathetic realism and the "harrowing" impact of the struggles of the brutish Stanley Kowalski (a 23-year-old Marlon Brando, with Kim Hunter as wife Stella) and the deluded Blanche. The play wins Williams a Pulitzer Prize in 1948 and makes Brando a star.

40 YEARS AGO
TELLTALE HEART

South African surgeon Christiaan Barnard (right) performs the first human heart transplant on December 3, 1967, giving grocer Louis Washkansky, 55, the heart of Denise Darvall, 24, a car accident victim, in a nine-hour procedure in Capetown. "I am a new Frankenstein," quips Washkansky, who despite initial progress dies 18 days later of pneumonia. By 2007, some 70,000 hearts will have been transplanted, with some functioning more than 20 years.

130 YEARS AGO
GOOD VIBRATIONS

Envisioning uses from dictation to elocution lessons, Thomas Edison applies for a patent for the cylinder phonograph on December 24, 1877. One needle records sound vibrations on a tinfoil-wrapped cylinder; a second plays them back. His first recorded words? "Mary had a little lamb." The patent is granted in February 1878, and Edison turns his attention to inventing the light bulb.

CLOCKWISE FROM TOP LEFT: GRANGER COLLECTION, NEW YORK; ALAMY; ELIOT ELISOFON / TIME LIFE PICTURES / GETTY IMAGES; BELL LABS; BETTMANN / CORBIS; VISUAL ARTS LIBRARY / ALAMY

Visit Smithsonian.com/history for "Today in History"

SMOOTH WATERS
SOUTHERN CHARM

8 Day, 7 Night Cruise

Cruise along the smooth inland waters on America's brand new and most modern small cruise ships.

Take in the dazzling scenery from your private balcony as you glide to some of the most historic ports along the magnificent East Coast.

Enjoy eight days of sumptuous dining and attentive service, and discover the heritage and charm of the Historic Antebellum South.

With no more than 100 passengers, our small ships let you experience America's great places up close.

THE WORLD'S NEWEST FLEET OF CRUISE SHIPS

AMERICAN CRUISE LINES

1-800-460-6187 for more information and FREE Brochure

Tell them they're little, shiny, round, historic action figures.

THE 2007 UNITED STATES MINT PROOF SET® IS HERE. JUST $26.95

Imagine the superheroes of our nation in deep-mirrored, super-sharp relief. Pristine examples of mint craftsmanship sealed in a special display case, these extraordinarily brilliant coins are a great way to commemorate a birthday or milestone. Best of all, they'll keep these action figures for years.

FOR GENUINE UNITED STATES MINT PRODUCTS,
VISIT WWW.USMINT.GOV OR CALL 1.800.USA.MINT.

GENUINELY WORTHWHILE

UNITED STATES MINT

Around the Mall

SCENES AND SIGHTINGS FROM THE SMITHSONIAN MUSEUMS AND BEYOND

From the Castle p. 28
Jukebox p. 31
The Object at Hand p. 32
Q&A: Jenny Holzer p. 34
Making History p. 34
What's Up p. 37

MARCOS GUERRA / STRI

LAST STAND

FOR YEARS, SMITHSONIAN BOTANIST WILLIAM LAURANCE AND HIS COLLEAGUES HAVE STUDIED HOW TO SAVE THE IMPERILED AMAZON RAIN FOREST. NOW, THEIR RESEARCH IS ALSO UNDER SIEGE

PAGE 31

Laurance (at the Smithsonian Tropical Research Institute in Panama) says losing the Amazon research would be "tragic."

FROM THE CASTLE

Co-Evolution

BY CRISTIÁN SAMPER

THE MADAGASCAR STAR ORCHID produces nectar at the bottom part of its slim, foot-long throat. After observing a specimen, Charles Darwin predicted the existence of a moth with a proboscis long enough to reach that nectar. Sure enough, decades later the giant hawk moth of Madagascar was discovered and named *Xanthopan morganii praedicta* in honor of Darwin's prescience. As the moth sucks up the nutrient-rich nectar from the orchid, packets of pollen stick to its body. When the moth visits other star orchids to feed again, the pollen rubs off and pollinates those orchids. The moth gets exclusive access to food and the orchids get a reliable pollinator.

Very nifty, but how does such an interaction develop? The "Partners in Evolution: Butterflies & Plants" exhibit coming to the National Museum of Natural History in February will explore how animals and plants evolve in response to one another, a process that biologists call co-evolution. But there were not always flowers and butterflies. Early plants lacked what we know as flowers, and there were no butterflies, only moths. Then about 100 million years ago, plants with bowl-shaped flowers emerged with a novel food source for moths: nectar. About 50 million years ago, day-flying moths—butterflies!—evolved; they were well suited for taking advantage of nectar.

Coming in 2008: a butterfly show (giant hawk moth, above), a huge new Ocean Hall and the remodeled Museum of American History.

Hummingbirds, flies, bats, bees and other creatures are also pollinators, often to our benefit. Bats pollinate more than 300 kinds of plants used by humans; pollination by bees, flies, beetles and other insects is responsible for providing about one-third of the human diet. Today 350,000 species of flowering plants and more than 150,000 kinds of moths and butterflies inhabit our planet. The new exhibit will illuminate some of the fascinating dynamics of their co-evolution. For example, in one species of fly, various flowers leave pollen on different parts of the fly's body—ensuring that different pollens don't mix. The exhibit will also include a walk-through butterfly pavilion, featuring live tropical butterflies and plants from around the world.

Next year will bring other spectacular exhibitions at the Smithsonian. The American History Museum will reopen with its new Star-Spangled Banner exhibit next summer. In September, a huge new Ocean Hall at Natural History will open; high-definition videos on large screens and a live coral reef will give visitors the feeling that they are deep beneath the waves in a giant submarine, looking out through its big picture windows. We welcome you to 2008, a year of new and fascinating exhibits.

CRISTIÁN SAMPER *is Acting Secretary of the Smithsonian Institution.*

Smithsonian Institution

ACTING SECRETARY

Cristián Samper

BOARD OF REGENTS

The Chief Justice of the United States

Vice President of the United States, Richard B. Cheney

Hon. Thad Cochran
Hon. Christopher J. Dodd
Hon. Patrick J. Leahy
Hon. Sam Johnson
Hon. Xavier Becerra
Hon. Doris Matsui
Mr. Eli Broad
Ms. Anne d'Harnoncourt
Dr. Phillip Frost
Dr. Shirley Ann Jackson
Mr. Robert P. Kogod
Mr. Roger W. Sant
Mr. Alan G. Spoon
Ms. Patricia Q. Stonesifer

SMITHSONIAN NATIONAL BOARD

Mr. L. Hardwick Caldwell III, CHAIR
Mrs. Peggy Paulson Burnet, VICE CHAIR
Mr. Peter H. Lunder, VICE CHAIR
Mr. Paul Neely, VICE CHAIR

NATIONAL BOARD: Mrs. Claudia Ream Allen, Ms. Valerie Anders, Mrs. Judy Hart Angelo, Mrs. Barbara Barrett, Dr. Wilmer S. Cody, Mr. James F. Dicke II, Mr. John G. Ellison, Jr., Mrs. Sakurako D. Fisher, Mr. Michael R. Francis, Mr. Bradford M. Freeman, Mr. John French III, Mrs. Shelby M. Gans, Mr. Richard W. Herbst, Ms. Irene Y. Hirano, Mr. Steven G. Hoch, Mrs. Judy Huret, Mr. Robert E. Keith, Jr., Ms. Jane Lipton, Mr. Robert Long, Mr. Robert O. MacDonald, Mr. Chris E. McNeil, Jr., Mr. Gary B. Moore, Mr. Morris W. Offit, Mr. Russell E. Palmer, Jr., Ms. Judy Lynn Prince,* Mr. William M. Ragland, Jr., Hon. Ronald A. Rosenfeld, Mrs. Theiline P. Scheumann, Mrs. Marna Schnabel, Hon. Rodney E. Slater, Mrs. Beatrice R. Taylor, Mr. Douglas C. Walker, Mr. Mallory Walker

HONORARY MEMBERS: Mr. Robert McC. Adams, Mr. William S. Anderson, Hon. Max N. Berry, Mr. Richard P. Cooley, Mr. Frank A. Daniels, Jr., Mr. Charles D. Dickey, Jr., Mrs. Patricia Frost, Mr. Alfred C. Glassell, Jr., Mr. I. Michael Heyman, Mr. James M. Kemper, Jr., Mrs. Jean B. Mahoney, Justice Sandra D. O'Connor, Mr. Francis C. Rooney, Jr., Mr. Wilbur L. Ross, Jr., Mr. Lloyd G. Schermer, Hon. Frank A. Weil, Mrs. Gay F. Wray

* Ex-Officio

MITSUHIKO IMAMORI / MINDEN PICTURES

American Cancer Society®

NO ONE DESERVES TO GET CANCER,
BUT EVERYONE DESERVES THE RIGHT TO FIGHT IT.

There are 47 million uninsured people in America, and countless others with insurance that doesn't cover a disease as devastating as cancer. We're making progress, but it's not enough if people aren't getting the care that could save their lives.

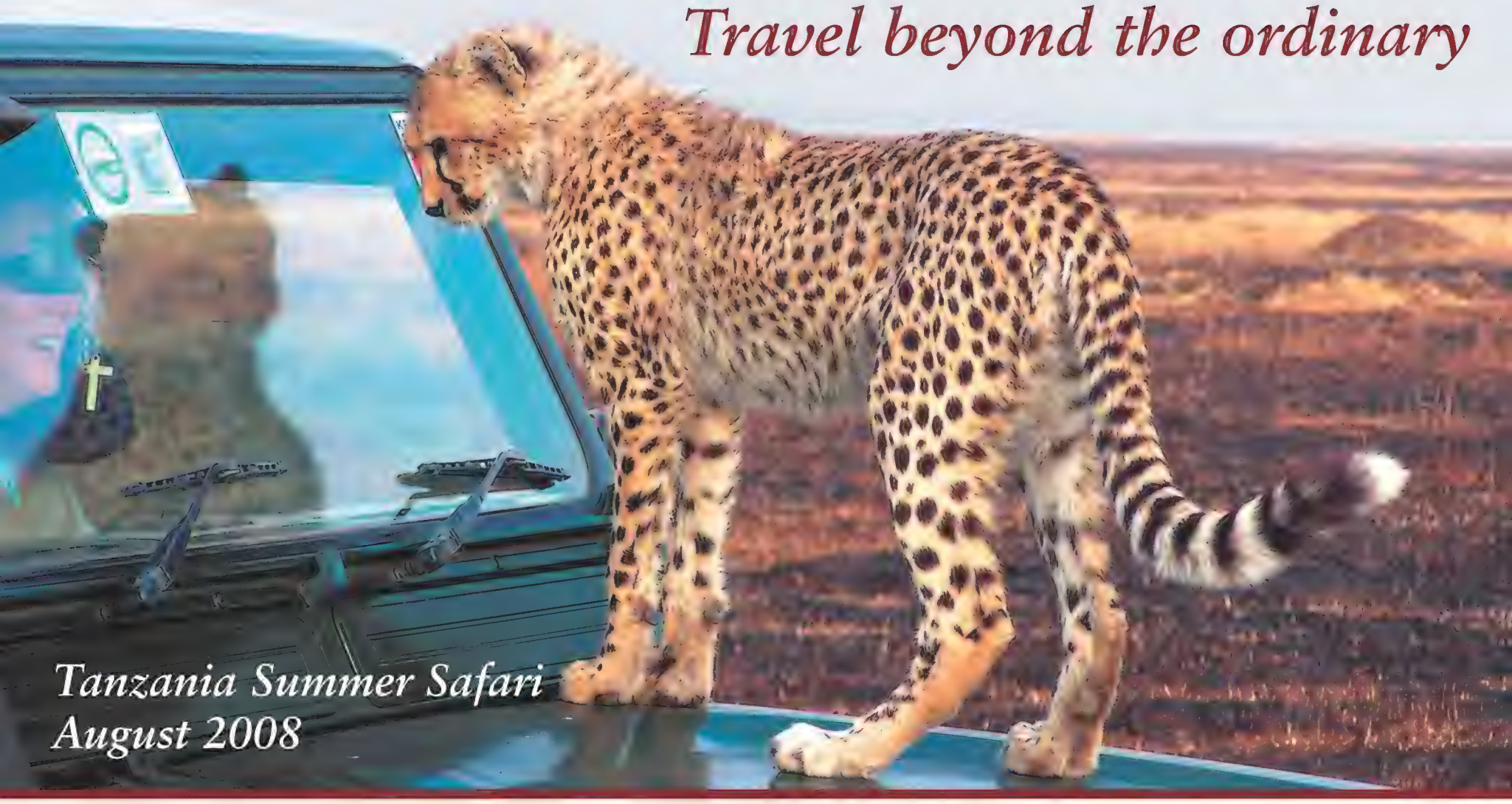
cancer.org

800.ACS.2345

FIND OUT WHAT WE'RE DOING AND HOW YOU CAN HELP AT cancer.org.

ADVERTISEMENT

Travel beyond the ordinary



SMITHSONIAN JOURNEYS SIGNATURE TOURS

Innovative tours led by world-class experts

Call toll-free 1-877-338-8687

TANZANIA SUMMER SAFARI **August 4-15, 2008**
Create memories for a lifetime on our special summer safari at Tanzania's most famous wildlife reserves—Arusha National Park, Ngorongoro Crater, the Serengeti, and Lake Manyara National Park. $8,295

FAMILY ODYSSEY THROUGH GREECE **June 23-July 3 and June 30-July 10, 2008**
Bring the ancient world alive for your children or grandchildren on this special journey to the Cycladic Islands and mainland Greece. From aboard our private yacht, explore sites described by Homer, discover temples and villages, and swim in the Aegean. From $6,990 (Call for special child rates)

FAMILY ADVENTURE IN JACKSON HOLE **July 6-12, 2008**
With your family, explore the natural wonders of Grand Teton and Yellowstone national parks. Enjoy the exhilaration of hiking, rafting, and horseback riding with expert naturalists from the Teton Science School, who answer all your questions. $2,795 (Call for special child rates)

SMITHSONIAN AT CHAUTAUQUA **THREE THEME WEEKS! July and August 2008**
Enjoy engaging discussions with Smithsonian Study Leaders and attend lectures and performances in this charming town in upstate New York. This year, choose from *The Ethical Frontiers of Science, Perspectives on American Foreign Policy,* and *Faith in Public Life.* $2,495

JOURNEY ACROSS RUSSIA **September 3-19, 2008**
Travel the entire expanse of Russia in style aboard your private train, the *Trans-Siberian Express,* and discover fascinating cultures from the Sea of Japan to Moscow's Red Square. From $14,150

LANDS OF THE GREAT BUDDHA BY PRIVATE JET **September 18-October 8, 2008**
Join us for this once-in-a-lifetime journey to explore Buddhism's cultural treasures in China, Japan, Mongolia, Nepal, Bhutan, India, Vietnam, Laos, and Cambodia. Call 1-866-903-7650 for details.

SMITHSONIAN JOURNEYS TRAVEL ADVENTURES WITH COLLETTE VACATIONS

Value-priced learning vacations

Call 1-800-528-8147
or contact your travel agent and mention promotion code A251-AX1-918

ITALIAN MASTERPIECES FEATURING ROME, TUSCANY & UMBRIA
April 10-19, 2008
Discover Italy's artistic, historic, and culinary treasures, from the remarkable masterpieces of the Vatican, Florence, and Siena to Assisi, Perugia, and Montepulciano. From $2,449

MEXICO'S TREASURE: THE YUCATAN
April 13-20, 2008
Travel to the Yucatan Peninsula to explore Maya archaeological sites, observe incredible flora and fauna, and enjoy mouth-watering Yucatecan cuisine. From $1,199

ECUADOR AND THE GALAPAGOS ISLANDS **April 12-23, 2008**
Delve into the fascinating cities of Quito and Guayaquil, and enjoy a cruise of the Galapagos Islands, teeming with exotic wildlife. From $3,999

Code 810188 – All prices per person, based on double occupancy

Call for your FREE 2008 travel catalogs—featuring many newly added tours! Or visit our new website
SmithsonianJourneys.org

Smithsonian Institution

Smithsonian JOURNEYS

Up in Smoke?

Amazon research that has withstood thieves and arsonists now faces its greatest challenge

In 2006, a colonist set fire to long-term study plots (left) to produce charcoal.

IN BRAZIL, the Amazon rain forest extends across 1.3 million square miles—and yet patches of land measuring just 386 square miles might be the best hope for ensuring the survival of the vast ecosystem, one of the world's largest and most diverse.

The site is home to the Biological Dynamics of Forest Fragments Project (BDFFP), operated jointly by the Smithsonian Tropical Research Institute (STRI) and Brazil's National Institute for Amazonian Research. For nearly 30 years, scientists and students at BDFFP have been gathering crucial data on the environmental impact of farming, logging and human settlements. Now, however, the study area is threatened by those very same activities. "It would be tragic to see a site that's given us so much information be lost so easily," says William Laurance, a STRI biologist who has been working on the project for 12 years. Originally slated to run until 1999, the project is still flourishing.

At issue is the perennial conflict between natural conservation and economic development. The research site is located within the Agricultural District of the Manaus Free Trade Zone, which the Brazilian government established in 1967 to attract commerce to the region. The agency that manages the zone, Superintendência da Zona Franca de Manaus (SUFRAMA), recently announced plans for at least six colonization projects that would relocate 180 families in an area that encompasses the research site.

It's an especially bitter turn of events for the scientists, whose research plots have already been subjected to raids, equipment theft and burning by colonists for the much desired commodity, charcoal.

Laurance and his colleagues have focused their studies on what is known as "forest fragmentation." Rain forest clearing does not occur in one clean sweep; rather, it is a patchwork of encroachments that create oases of near pristine forest. The question is how large these forest fragments have to be in order to sustain their delicate ecosystems. Finding an answer could prove vital in planning development projects that would allow for human settlement without unnecessarily destroying swaths of forest.

The researchers cleared the surrounding areas to create patches ranging from 2.5 to 250 acres. By comparing data from each plot before and after it was isolated, scientists have found that the larger the fragment, the better. If it's too small, the entire ecosystem unravels: drying winds penetrate the interior, killing trees. Animals suffer too. In a recently completed study of bird extinction patterns, the researchers found that fragments less than 250 acres lose half of the bird species in the forest's interior within 15 years. That loss is too rapid for bird populations to recover.

Such findings argue against settling the area, environmental advocates say. Claude Gascon of Conservation International acknowledges that the Brazilian government is "within its mandate to use land for economic development" but believes it "should align [its] policies with what scientific results have shown." For its part, the Brazilian agency behind the settlement move, SUFRAMA, stresses that it conducted an environmental survey in 2004, and that it is "only the initial stage of a wide-ranging implementation process." SUFRAMA also contends that it "has striven to give its full support to the work of research institutions" in the area. Smithsonian's Laurance disagrees. He says the agency's proposed incursion into the research area ignores the findings of its own study.

The scientists are now enlisting the help of sympathetic agencies such as the Brazilian Institute of Environment and Renewable Natural Resources. Laurance emphasizes there is little to be gained by colonization, as the Amazon's low-quality soil makes for poor agriculture. "The social and economic benefits are paltry relative to the scientific and conservation benefits," he says. { BY JESS BLUMBERG }

HITTING THE RIGHT NOTES The marimba, a type of xylophone with wooden bars arranged like piano keys, is believed to have been first brought to Latin America by African slaves. Marimba Chapinlandia, a band based in Guatemala City, uses an additional instrument, a train whistle, on "Ferrocarril de los altos" ("The Highland Train"), composed by the renowned marimbista Domingo Bethancourt in 1930 to commemorate the first railroad line from the highlands to the coast. Hear it on Smithsonian.com/jukebox and *Champinlandia: Marimba Music of Guatemala*, a new Folkways collection featuring 19 of the band's songs.

{ BY JESS BLUMBERG }

THIAGO IZZO; DANIEL SHEEHY / SMITHSONIAN FOLKWAYS RECORDINGS

For an insider's look at the Smithsonian, visit Smithsonian.com/mallblog

THE OBJECT AT HAND

Chia Pet

NATIONAL MUSEUM OF AMERICAN HISTORY

GROWTH INDUSTRY

For 26 years, marketing whiz Joe Pedott's green-pelted figures have been holiday-season hits

BY OWEN EDWARDS

BECAUSE MANY a potential pet owner, it seems, has no interest in early morning walks, cage cleaning, litter boxes or veterinary bills, the world's inventors and entrepreneurs constantly conjure creatures that ask next to nothing of their masters. Robot dogs, for example, need only a change of batteries. The pocket-size Tamagotchi, a handheld, egg-shaped computerized device marketed as a digital pet, requires daily attention, but its vital signs are strictly virtual; if it dies, one can boot up another. The pet rock may have been the most trouble-free of companions, but a goldfish was capable of more affection.

Of all the undemanding critters, perhaps none is as satisfying as the Chia Pet, the clay figure that when coated with the seeds of a Mexican herb (*chia*, a kind of sage) and filled with water, sprouts a lush coat of green fur in a couple of weeks. No doubt there are people whose childhoods were not warmed by the sight of a flourishing Chia Pet. Those countless thousands of us who were luckier can feel only sympathy for the uninitiated. For more than 25 years, the Chia has been a Christmas staple, offering amusement, amazement and exposure to Agriculture 101.

Just add water: the discovery of the low-maintenance critter, says marketing guru Pedott, was a "lucky accident."

Chia Pets have been good to hundreds of thousands of kids for decades. But Chia Pets have been even better to Joe Pedott, who made a tidy fortune as he turned them into a household object. From his apartment at the top of San Francisco's Lombard Street, looking out on a view that stretches from the Golden Gate Bridge to the Bay Bridge, Pedott describes the Chia as a "really lucky accident."

Pedott, 75, is what can only be characterized as a marketing whiz. In the mid-1950s, after moving from Chicago, where he grew up, to San Francisco, the 25-year-old Pedott opened his own advertising firm. He continued to return regularly to his hometown, however. In 1977, on the lookout for potential clients, he attended the annual housewares show in the Windy City. There he asked a buyer from a large West Coast drugstore chain about his big holiday sellers. "He told me that something called the Chia Pet always sold out," Pedott recalls. "So I went over to talk with a man named Walter Houston, who was importing the little figures from Mexico." Houston, however, wasn't turning much profit on the enterprise.

Pedott, believing he could do better with the product, negotiated to buy the rights from Houston.

Pedott visited the town in Mexico where the pets

JOHN LEE / AURORA SELECT; TOM WOLFF; JOSEPH ENTERPRISES, INC.

PRESENTING THE BOSE® WAVE® MUSIC SYSTEM

Acclaimed Bose® sound.

Enjoy it more with the optional Multi-CD Changer.

Shown with optional Multi-CD Changer.

Stephen Williams,
Newsday
"...did make me sit up and listen and smile."

Wayne Thompson,
Oregonian
"...one-of-a-kind... my choice for product of the year."

Rich Warren,
News-Gazette
"...the Wave Music System will flat out seduce you."

Dick DeBartolo,
The Giz Wiz
"You will be wildly impressed!"

The Wave® music system shown in Graphite Gray.

Listen to the Wave® music system risk free for 30 days. Experience premium sound that sets new standards for an all-in-one system that fits on a shelf or countertop. You'll hear the kind of performance that has made Bose the most respected name in sound. *Forbes FYI* says you'll think you're listening to a "...system that costs five times more." It features an FM/AM digital tuner, clock, alarm and more. And our optional Multi-CD Changer lets you enjoy your music for hours on end. Save $50 if you order them together by December 31, 2007. Try it with our 30-day Excitement Guarantee. When you call, ask about using your own major credit card to make **12 easy payments,** with no interest charges from Bose.*

SAVE $50
when you order the Wave® music system with our Multi-CD Changer by December 31, 2007.

To order or learn more:

1-800-925-9738, ext. TL235
www.Bose.com/WMS

BOSE®
Better sound through research®

*Bose payment plan available on orders of $299-$1500 paid by major credit card. Separate financing options may be available for select products. See website for details. Down payment is 1/12 the product price plus applicable tax and shipping charges, charged when your order is shipped. Then, your credit card will be billed for 11 equal monthly installments beginning approximately one month from the date your order is shipped, with 0% APR and no interest charges from Bose. Credit card rules and interest may apply. U.S. residents only. Limit one active financing program per customer. ©2007 Bose Corporation. Patent rights issued and/or pending. The Wave® music system's distinctive design is a registered trademark of Bose Corporation. Financing and reduced pricing on Multi-CD Changer package not to be combined with other offers or applied to previous purchases, and subject to change without notice. If the Wave® music system is returned, the Multi-CD Changer must be returned for a full refund. Offers are limited to purchases made from Bose and participating authorized dealers. Offer valid November 1, 2007, through December 31, 2007. Quotes reprinted with permission: Thomas Jackson, *Forbes FYI*, Winter/04; Dick DeBartolo, The Giz Wiz, *GizWizBiz.com*, 8/13/04.

were made (they're now produced in China, like just about everything else). Once he was on the scene, he discovered that the middleman between the company and the factory was cheating on prices. (Hence his predecessor Houston's inability to make much money.)

Pedott began manufacturing, importing and advertising the Chia. Back in San Francisco, at an agency brainstorming session, someone pretended to stutter the name; Pedott knew a good thing when he heard it, and "Ch-ch-ch-Chia" entered the Valhalla of memorable advertising catchphrases. (His companies also produce and advertise another staple of the holiday marketing season, the Clapper, a device for turning lights, televisions and radios on and off.)

Today, the range of Chias has expanded, with licensed characters including Elmer Fudd, Shrek and Homer Simpson growing green manes. "The new Chias are fun," Pedott says, "but the original bull and ram are still the most popular." How popular? According to Pedott, some 500,000 Chias are sold each year during the holiday season.

In 2003, John Fleckner, chief archivist at the National Museum of American History, asked Pedott to donate his company's papers, television advertising tapes and a selection of Chia Pets to the archive center. "Joe told me to take whatever we want," Fleckner recalls.

The ch-ch-ch-Chia is so much a part of American consumer lore that it was ch-ch-ch-chosen to be included in a *New York Times* time capsule, to be opened in the year 3000, along with a Purple Heart medal, a can of Spam and a Betty Crocker cookbook.

Over a cup of excellent coffee, served in a Chia Pet cup, I ask Pedott if he is surprised by the lasting success of his pet pals. Gazing out at the expansive, expensive view, he smiles. "Absolutely."

OWEN EDWARDS *is a freelance writer and author of the book* Elegant Solutions.

Q&A

The artist **JENNY HOLZER** created *For SAAM*, a column of light and text, for the Smithsonian American Art Museum (SAAM). She spoke with Jess Blumberg.

YOU'VE PROJECTED TEXT ONTO ROME'S SPANISH STEPS, THE REICHSTAG AND A BEACH IN RIO DE JANEIRO. WHAT HAS BEEN YOUR FAVORITE MEDIUM? I like water. Very recently, we projected onto the Pacific Ocean. We had poems there about war and peace—and those seemed timely.

YOUR MOST CHALLENGING PROJECT? Probably in Liverpool, where the fog rolled in. Apart from a brief moment when the text appeared in the sky and looked miraculous, the fog killed the projections for a while.

IS THERE ANYTHING THAT MAKES *FOR SAAM* SMITHSONIAN-SPECIFIC? I wanted the piece to fit and reflect the space. Because [SAAM's] Lincoln Gallery is tall and white, I made something that is attenuated, light and barely there. I wanted the content to be broad and balanced but on a number of tough topics.

HOW DID YOU DECIDE WHAT TEXT TO USE? I chose the very first series I wrote, *The Truisms*, because it functions almost as an index of what's to come next. And these first sentences, the one-liners, are written from many points of view on any number of topics. And then I went on to more recent series that are more personal.

DO YOU FEEL THE URGE TO USE MORE PROVOCATIVE TEXT WHEN WORKING IN WASHINGTON? If anything, it makes me a bit cautious because I think gratuitous provocation is stupid. I think the text is diverse, democratic enough that there will be something for everyone. And I hope that sincerity will come through—a glimpse of my wanting things to turn out well, which I trust is alive and well in Washington.

WHAT DO YOU CONSIDER TO BE THE TRUEST OF ALL YOUR TRUISMS? "Abuse of power comes as no surprise."

Visit Smithsonian.com/mall to read more of our Jenny Holzer interview

MAKING HISTORY

FAMILY REUNION Until a few months ago, he was just "the boy in the iron coffin." After construction workers unearthed his remains in Washington, D.C. while digging a gas line in 2005, the task of identifying him fell to a team led by Doug Owsley, a forensic anthropologist at Smithsonian's National Museum of Natural History. The development of the boy's teeth indicated he had died in his mid-teens. His clothing suggested the mid-1800s. A search of census records and obituaries led to a name—William Taylor White. An orphan from Accomack County, Virginia, he had moved to Washington to attend Columbian College (now George Washington University) and died at age 15 on January 24, 1852, likely from a heart condition. The researchers traced White's family tree and confirmed his identity by comparing his DNA with that of a living relative, Linda Dwyer of Lancaster, Pennsylvania. "I was flabbergasted," Dwyer says, adding that the researchers had also found "a whole bunch of cousins I didn't know I had."

{ BY CHRISTINE DELL'AMORE }

AP IMAGES; KEN RAHAIM / NMNH, SI

THE MOST FUEL-EFFICIENT SUV ON EARTH.

THE 2008 ESCAPE HYBRID.

HYBRID

With its electric motor and regenerative braking, the 34 MPG Escape Hybrid helps you minimize your exhaust emissions and use less gas. Learn more at **FORDVEHICLES.COM**.

Ford

Based on U.S. EPA rankings and best city mileage in VCA data. EPA-estimated 34 city/30 hwy mpg, FWD. Actual mileage will vary.

Copyright© 2007 Smithsonian Institution | © 2007 Bernhardt

Be Inspired by a Work of Art.

Imagine being able to bring both history and art into your home. Be inspired by the distinctive furniture of the Smithsonian Collection by Bernhardt, with an artful blend of American treasure, creative design, and time-honored craftsmanship for today's lifestyles.

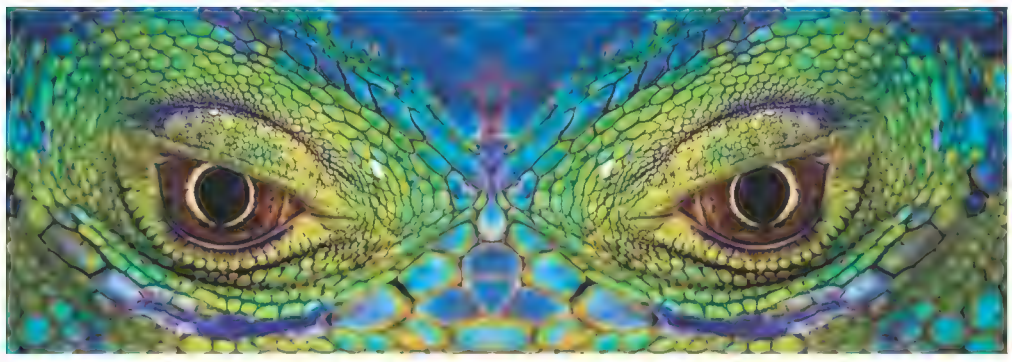
Smithsonian® Collection
by BERNHARDT

A Fine Collection of Bedroom, Dining Room, and Living Room Furniture

www.bernhardt.com | 866-527-9101

What's Up

CANDID CAMELOT Richard Avedon photographed the Kennedys in Palm Beach in 1961. More than 75 unpublished images he donated to the American History Museum (Caroline, 3, and Jack) are in the new book *The Kennedys: Portrait of a Family.*



DOUBLE VISION

Unnerved? Don't worry: Michael D. Kern created this glaring iguana by duplicating and rearranging a picture of just one eye. Other winners of the Nature's Best Photography Awards are at Natural History through April 29.

KALEIDOSCOPE

The colorful acrylics of Norval Morrisseau (*Untitled*, 1971) have been compared to stained glass. See them sparkle at the American Indian Museum's Heye Center in New York City to January 20.

OPEN COURT

Ta-da! After three years, the Robert and Arlene Kogod Courtyard, with its wavy glass canopy and lush landscaping, opened this past month in the Old Patent Office Building—the Portrait Gallery and American Art museum.

SUBLIME STONEWARE

In Southeast Asia, watertight stoneware (a c. 19th-century Vietnamese jar) was used to brew ceremonial rice beer, store grains and transport goods. On view at the Sackler Gallery through 2010: some 200 ceramic vessels crafted in Vietnam, Thailand, Laos, Cambodia and Burma, spanning 4,000 years.

{ BY JESS BLUMBERG }

VISIT THE SMITHSONIAN For a free Associates' planning packet, call 202 633-1000 or 202 633-5285 (TTY), 9 a.m. to 5 p.m. Monday through Friday and 9 a.m. to 4 p.m. Saturday. Or send an e-mail to info@si.edu. The Smithsonian Information Center in the Castle is open daily, 8:30 a.m. to 5:30 p.m. Members can visit the reception desk between 9 a.m. and 4 p.m. to register for a behind-the-scenes tour and to hear about membership benefits. Most museums are open daily, 10 a.m. to 5:30 p.m. All museums are closed December 25.

See more Avedon photographs at Smithsonian.com/kennedy

RICHARD AVEDON / NMAH, SI / HARPERCOLLINS; MICHAEL D. KERN / NATURE'S BEST PHOTOGRAPHY WINDLAND SMITH RICE INTERNATIONAL AWARDS; NORVAL MORRISSEAU / NMAI, SI; SACKLER GALLERY, SI; BRENDAN MCCABE

KEEPERS *of the*

Tradition holds that the ark of the covenant—containing the Ten Commandments—vanished in the sixth century B.C. Christians in Ethiopia have long claimed to have it. Our reporter went there to investigate

TEXT AND PHOTOGRAPHS BY
PAUL RAFFAELE

"They shall make an ark of acacia wood," God commanded Moses in the Book of Exodus, after delivering the Israelites from slavery in Egypt. And so the Israelites built an ark, or chest, gilding it inside and out. And into this chest Moses placed stone tablets inscribed with the Ten Commandments, as given to him on Mount Sinai.

Thus Jews came to revere the ark as an earthly manifestation of God. The Old Testament describes its enormous powers—blazing with fire and light, halting rivers, blasting away armies and bringing down the fabled walls of Jericho. (Steven Spielberg's 1981 film *Raiders of the Lost Ark* provides a special-effects approximation.) According to the First Book of Kings, King Solomon built the First Temple in

In an 18th-century painting (right), the ark is brought before King Solomon, whose right hand touches a chalice. Today, facsimiles of the tablets (swathed in velvet, above) allegedly kept in the ark are prominent in Ethiopian Christian services.

Smithsonian
{ DECEMBER 2007 · VOLUME 38, NUMBER 9 }

LOST ARK?

Jerusalem to house the ark. It was venerated there during Solomon's reign (c. 970-930 B.C.) and beyond.

Then it vanished. Much of Jewish tradition holds that it disappeared before or while the Babylonians sacked the temple in Jerusalem in 586 B.C.

But through the centuries, Ethiopian Christians have claimed that the ark rests in a chapel in the small town of Aksum, in their country's northern highlands. It arrived nearly 3,000 years ago, they say, and has been guarded by a succession of virgin monks who, once anointed, are forbidden to set foot outside the chapel grounds until they die.

ONE OF THE FIRST THINGS that caught my eye in Addis Ababa, the country's capital, was an enormous concrete pillar topped by a giant red star—the sort of monument to communism still visible in Pyongyang. The North Koreans built this one as a gift for the Derg, the Marxist regime that ruled Ethiopia from 1974 to 1991 (the country is now governed by an elected parliament and prime minister). In a campaign that Derg officials named the Red Terror, they slaughtered their political enemies—estimates range from several thousand to more than a million people. The most prominent of their victims was Emperor Haile Selassie, whose death, under circumstances that remain contested, was announced in 1975.

He was the last emperor of Ethiopia—and, he claimed, the 225th monarch, descended from Menelik, the ruler believed responsible for Ethiopia's possession of the ark of the covenant in the tenth century B.C.

For centuries, Ethiopian rulers have claimed that their right to reign is God-given, based on their descent from Solomon and Sheba. The last emperor, Haile Selassie (above), had mention of the lineage written into the constitutions of 1931 and 1955.

The story is told in the *Kebra Negast* (Glory of the Kings), Ethiopia's chronicle of its royal line: the Queen of Sheba, one of its first rulers, traveled to Jerusalem to partake of King Solomon's wisdom; on her way home, she bore Solomon's son, Menelik. Later Menelik went to visit his father, and on his return journey was accompanied by the firstborn sons of some Israelite nobles—who, unbeknown to Menelik, stole the ark and carried it with them to Ethiopia. When Menelik learned of the theft, he reasoned that since the ark's frightful powers hadn't destroyed his retinue, it must be God's will that it remain with him.

Many historians—including Richard Pankhurst, a British-born scholar who has lived in Ethiopia for almost 50 years—date the *Kebra Negast* manuscript to the 14th century A.D. It was written, they say, to validate the claim by Menelik's descendants that their right to rule was God-given, based on an unbroken succession from Solomon and the Queen of Sheba. But the Ethiopian faithful say the chronicles were copied from a fourth-century Coptic manuscript that was, in turn, based on a far earlier account. This lineage remained so important to them that it was written into Selassie's two imperial constitutions, in 1931 and 1955.

Before leaving Addis Ababa for Aksum, I went to the offices of His Holiness Abuna Paulos, patriarch of the Ethiopian Orthodox Church, which has some 40 million adherents worldwide, to ask about Ethiopia's claim to have the ark of the covenant. Paulos holds a PhD in theology from Princeton University, and before he was installed as patriarch, in 1992, he was a parish priest in Manhattan. Gripping a golden staff, wearing a golden icon depicting the Madonna cradling an infant Jesus, and seated on what looked like a golden throne, he oozed power and patronage.

"We've had 1,000 years of Judaism, followed by 2,000 years of Christianity, and that's why our religion is rooted in the Old Testament," he told me. "We follow the same dietary laws as Judaism, as set out in Leviticus," meaning that his followers keep kosher, even though they are Christians. "Parents circumcise their baby boys as a religious duty, we often give Old Testament names to our boys and many villagers in the countryside still hold Saturday sacred as the Sabbath."

Is this tradition linked to the church's claim to hold the ark, which Ethiopians call Tabota Seyen, or the Ark of Zion? "It's no claim, it's the truth," Paulos answered. "Queen Sheba visited King Solomon in Jerusalem three thousand years ago, and the son she bore him, Menelik, at age 20 visited Jerusalem, from where he brought the ark of the covenant back to Aksum. It's been in Ethiopia ever since."

I asked if the ark in Ethiopia resembles the one described in the Bible: almost four feet long, just over two feet high and wide, surmounted by two winged cherubs facing each other across its heavy lid, forming the "mercy seat," or footstool for the throne of God. Paulos shrugged. "Can you believe that even though I'm head of the Ethiopian church, I'm still forbidden from seeing

PAUL RAFFAELE *is a frequent contributor to* SMITHSONIAN. *His story on Congo's imperiled mountain gorillas appeared in October.*

HULTON ARCHIVE / GETTY IMAGES; MAP: MIKE REAGAN; PP. 38-39 MUSEE DES BEAUX-ARTS, CAEN, FRANCE / BRIDGEMAN ART LIBRARY

it?" he said. "The guardian of the ark is the only person on earth who has that peerless honor."

He also mentioned that the ark had not been held continuously at Aksum since Menelik's time, adding that some monks hid it for 400 years to keep it out of invaders' hands. Their monastery still stood, he said, on an island in Lake Tana. It was about 200 miles northwest, on the way to Aksum.

ETHIOPIA IS LANDLOCKED, but Lake Tana is an inland sea: it covers 1,400 square miles and is the source of the Blue Nile, which weaves its muddy way 3,245 miles through Ethiopia, Sudan and Egypt to the Mediterranean. At the outlet where the water begins its journey, fishermen drop lines from primitive papyrus boats like those the Egyptians used in the pharaohs' days. I glimpsed them through an eerie dawn mist as I boarded a powerboat headed for Tana Kirkos, the island of the ark.

Slowly the boatman threaded his way through a maze of tree-covered islands so dense that he began to wonder aloud whether we were lost. When, after two hours, we suddenly confronted a rock wall about 30 yards high and more than 100 yards long, he cried, "Tana Kirkos" with obvious relief.

A fish eagle circled and squawked as a barefoot monk clad in a patched yellow robe scurried down a pathway cut into the rock and peered into our boat. "He's making sure there are no women aboard," my translator said.

The monk introduced himself as Abba, or Father, Haile Mikael. "There are 125 monks on the island, and many are novices," he said. "Women have been banned for centuries because the sight of them might fire the young monks' passions."

Another monk, Abba Gebre Maryam, joined us. He, too, wore a patched yellow robe, plus a white pillbox turban. A rough-hewn wooden cross hung from his neck, and he carried a silver staff topped by a cross. In response to my questioning, he elaborated on what Abuna Paulos had told me:

"The ark came here from Aksum for safekeeping from enemies well before Jesus was born because our people followed the Jewish religion then," he said. "But when King Ezana ruled in Aksum 1,600 years ago, he took the ark back to Aksum." Ezana's kingdom extended across the Red Sea into the Arabian peninsula; he converted to Christianity around A.D. 330 and became hugely influential in spreading the faith.

Then Abba Gebre added: "The baby Jesus and Mary spent ten days here during their long exile from Israel." It

At Christmas, midnight Mass is celebrated at Bet Maryam, the church dedicated to the Virgin Mary. At last year's rite, these priests met before sundown and went without food or sleep for about 30 hours.

Christmas in Lalibela

50,000 pilgrims descend on Ethiopia's "new" Jerusalem

Lalibela is a nondescript town of a few dusty streets atop a rugged mountain some 200 miles north of Addis Ababa. But its 11 monolithic churches—carved out of the red volcanic stone in the 12th century, and now a World Heritage Site—are thronged by pilgrims every Christmas. Because of differences between Western and Ethiopian calendars and traditions, Ethiopians celebrate that holiday on what Westerners know as January 7.

When I visited Lalibela for Christmas celebrations this past January, the altitude—8,600 feet above sea level—and the crowds took my breath away: the tunnels and passageways connecting the churches were crammed with devotees bumping into and even shoving one another in their rush to get from one church to another. Lalibela has 20,000 residents, and "more than 50,000 pilgrims come for Christmas," my guide told me. "As you see, they burst the town at its seams." Crowds are expected to be even larger this Christmas because of the Ethiopian millennium: by the Ethiopian calendar, the year 2000 began this past September.

According to church tradition, it was two shipwrecked Christian boys who introduced the faith to Ethiopia in the fourth century; they worked as slaves in the royal court but eventually became advisers to King Ezana, who spread Christianity among his people. Abba Gebre Yesus, the bishop of Lalibela, told me that Lalibela became a holy city after the capture of Jerusalem by Muslim forces in 1187; since Ethiopian Christian pilgrims could no longer go there, the reigning king—Lalibela—declared the town to be a new Jerusalem.

Bet Medhane Alem is the world's largest monolithic church, 63 feet high by 45 feet wide and 24 feet deep. It resembles an ancient Greek temple, but Ethiopia's Jewish roots are reflected in the Star of David cut into the ceiling. "Thousands of workmen toiled here by day to carve out the church, and by night when they slept a host of angels continued the work," a young priest who gave his name as Arch Deacon Yonas Sisay told me. The angels, tradition says, dug three times the amount of the men.

After the stroke of midnight on January 7, I attended Christmas Mass at Bet Maryam, the church dedicated to the Virgin Mary. One of its frescoes is of the Star of David; close by is another depicting the flight by Mary, Joseph and Jesus into Egypt. That night, pilgrims jammed the church shoulder to shoulder and thronged the surrounding hills. To begin the Mass, priests chanted and rattled sistras, palm-size instruments from Old Testament times, and the celebration continued through the night.

At sunrise, the church emptied. More than 100 priests climbed the rocky steps to the rim of the pit overlooking the church and formed a line that snaked to the very edge of the drop. They wore white turbans, carried golden scarves and had red sashes stitched into the hems of their white robes. Several deacons began beating large drums, and the priests began to sway in unison, rattling their sistras, then crouching in a wavy line to the beat and rising again—King David's dance, the last of the Christmas ceremonies.

In the courtyard below, two dozen priests formed a tight circle with two drummers in the center and began chanting a hymn to the priests above, who responded in kind. "The courtyard priests represent the world's people, and the priests high above represent the angels," a priest told me. "Their singing is a symbol of the unity between heaven and earth." On they went for two hours, their movements and voices swelling in intensity. Many of those high above slipped into ecstatic trances, closing their eyes as they swayed. I feared that one of them—or more—would fall. But none did. ***—P.R.***

Amid a maze of outcroppings in Ethiopia's Lake Tana lies Tana Kirkos—the island of the ark. Monks at the monastery there say the ark was brought to the island for safekeeping during centuries of unrest that began before the birth of Christ.

was after King Herod ordered the death of all boys under the age of 2 in Bethlehem, he said. "Would you like to see the place where they often sat?"

I followed him up a wooded path and onto a ridge where a pair of young monks were standing by a small shrine, their eyes closed in prayer. Abba Gebre pointed to the shrine. "That's where Jesus and Mary sat each day while they were here."

"What proof do you have that they came here?" I asked.

He looked at me with what appeared to be tender sympathy and said: "We don't need proof because it's a fact. The monks here have passed this down for centuries."

Later, Andrew Wearring, a religious scholar at the University of Sydney, told me that "the journey by Jesus, Mary and Joseph is mentioned in only a few lines in the Book of Matthew—and he gives scant detail, though he does state they fled into Egypt." Like its former parent institution the Orthodox Coptic Church, the Ethiopian Orthodox faith holds that the family spent four years in western Egypt, Wearring said, in the Nile Valley and the Nile Delta, before returning home. But western Egypt is over 1,000 miles northwest of Lake Tana. Could Jesus, Mary and Joseph have traveled to Tana Kirkos? There's no way to know.

On the way back to the boat, we passed small log huts with conical thatched roofs—the monks' cells. Abba Gebre entered one and pulled from the shadows an ancient bronze tray set on a stand. He said Menelik brought it from Jerusalem to Aksum along with the ark.

"The Jerusalem temple priests used this tray to collect and stir the sacrificial animals' blood," Abba Gebre went on. When I checked later with Pankhurst, the historian said the tray, which he had seen on an earlier visit, was probably associated with Judaic rituals in Ethiopia's pre-Christian era. Lake Tana, he said, was a stronghold of Judaism.

Finally, Abba Gebre led me to an old church built from wood and rock in the traditional Ethiopian style, circular with a narrow walkway hugging the outer wall. Inside was the *mak'das*, or holy of holies—an inner sanctum shielded by brocade curtains and open only to senior priests. "That's where we keep our *tabots*," he said.

The tabots (pronounced "TA-bots") are replicas of the tablets in the ark, and every church in Ethiopia has a set, kept in its own holy of holies. "It's the tabots that consecrate a church, and without them it's as holy as a donkey's stable," Abba Gebre said. Every January 19, on Timkat, or the Feast of the Epiphany, the tabots from churches all over Ethiopia are paraded through the streets.

"The most sacred ceremony occurs at Gonder," he went on, naming a city in the highlands just north of Lake Tana. "To understand our deep reverence for the ark, you should go there."

GONDER (POP. 160,000) spreads across a series of hills and valleys more than 7,000 feet above sea level. On the advice of a friendly cleric, I sought out Archbishop Andreas, the local leader of the Ethiopian Orthodox Church. As Andreas ushered me into a simple room in his office, I saw that he had the spindly frame and sunken cheeks of an ascetic. Despite his high position, he was dressed like a monk, in a worn yellow robe, and he held a simple cross carved from wood.

I asked if he knew of any evidence that the ark had come to Ethiopia with Menelik. "These stories were handed down through the generations by our church leaders, and we believe them to be historical facts," he told me in a whisper. "That's why we keep tabots in every church in Ethiopia."

At noon the next day, Andreas, in a black robe and black turban, emerged from a church on a slope above Gonder and into a crowd of several hundred people. A dozen priests, deacons and acolytes—clad in brocade robes in maroon, ivory, gold and blue—joined him to

form a protective huddle around a bearded priest wearing a scarlet robe and a golden turban. On his head the priest carried the tabots, wrapped in ebony velvet embroidered in gold. Catching sight of the sacred bundle, hundreds of women in the crowd began ululating—making a singsong wail with their tongues—as many Ethiopian women do at moments of intense emotion.

As the clerics began to walk down a rocky pathway toward a piazza at the center of town (a legacy of Italy's occupation of Ethiopia in the 1930s), they were hemmed in by perhaps 1,000 more chanting and ululating devotees. At the piazza, the procession joined clerics carrying tabots from seven other churches. Together they set off farther downhill, with the trailing throng swelling into the thousands, with thousands more lining the road. About five miles later, the priests stopped beside a pool of murky water in a park.

All afternoon and through the night, the priests chanted hymns before the tabots, surrounded by worshipers. Then, prompted by glimmers of light sneaking into the morning sky, Archbishop Andreas led the clerics to celebrate the baptism of Jesus by playfully splashing one another with the pool's water.

The Timkat celebrations were to continue for three more days with prayers and masses, after which the tabots would be returned to the churches where they were kept. I was more eager than ever to locate the original ark, so I headed for Aksum, about 200 miles northeast.

A shrine (above) marks the spot where monks say Jesus and Mary often sat during their visit to Tana Kirkos. A monk (left) holds a vellum Bible with depictions of St. George and the Madonna and child.

JUST OUTSIDE GONDER, my car passed Wolleka village, where a mud-hut synagogue bore a Star of David on the roof—a relic of Jewish life in the region that endured for as long as four millennia, until the 1990s. That was when the last of the Bet Israel Jews (also known as the Falasha, the Amharic word for "stranger") were evacuated to Israel in the face of persecution by the Derg.

The road degenerated into a rutted, rocky pathway that twisted around the hillsides, and our SUV struggled to exceed ten miles per hour. I reached Aksum in darkness and shared the hotel dining room with United Nations peacekeepers from Uruguay and Jordan who told me they were monitoring a stretch of the Ethiopia-Eritrea border about an hour's drive away. The latest U.N. bulletin, they said, described the area as "volatile and tense."

The next day was hot and dusty. Except for the occasional camel and its driver, Aksum's streets were nearly empty. We weren't far from the Denakil Desert, which extends eastward into Eritrea and Djibouti.

By chance, in the lobby of my hotel I met Alem Abbay, an Aksum native who was on vacation from Frostburg State University in Maryland, where he teaches African history. Abbay took me to a stone tablet about eight feet high and covered in inscriptions in three languages—Greek; Geez, the ancient language of Ethiopia; and Sabaean, from across the Red Sea in southern Yemen, the true birthplace, some scholars believe, of the Queen of Sheba.

"King Ezana erected this stone tablet early in the fourth century, while still a pagan ruler," Abbay told me. His finger traced the strange-looking alphabets carved into the rock 16 centuries ago. "Here, the king praises the god of war after a victory over a rebel people." But sometime in the following decade Ezana was converted to Christianity.

Abbay led me to another stone tablet covered with inscriptions in the same three languages. "By now King Ezana

The holy day of Timkat, or the Feast of the Epiphany, is central to the Ethiopian Orthodox faith. In Gonder, priests punctuate their rites with a five-mile procession culminating in a dawn celebration of the baptism of Jesus.

Inscriptions on stone tablets in Aksum trace the conversion of King Ezana to Christianity in the fourth century, says historian Alem Abbay (above). Carvings on the 79-foot stele behind him are thought to symbolize Ezana's palaces and tomb.

is thanking 'the Lord of Heaven' for success in a military expedition into nearby Sudan," he said. "We know he meant Jesus because archaeological digs have turned up coins during Ezana's reign that feature the Cross of Christ around this time." Before that, they bore the pagan symbols of the sun and moon.

As we walked on, we passed a large reservoir, its surface covered with green scum. "According to tradition, it's Queen Sheba's bath," Abbay said. "Some believe there's an ancient curse on its waters."

Ahead was a towering stele, or column, 79 feet high and said to weigh 500 tons. Like other fallen and standing steles nearby, it was carved from a single slab of granite, perhaps as early as the first or second century A.D. Legend has it that the ark of the covenant's supreme power sliced it out of the rock and set it into place.

On our way to the chapel where the ark is said to be kept, we passed Sheba's bath again and saw about 50 people in white shawls crouched near the water. A boy had drowned there shortly before, and his parents and other relatives were waiting for the body to surface. "They say it will take one to two days," Abbay said. "They know this because many other boys have drowned here while swimming. They believe the curse has struck again."

Abbay and I made our way toward the office of the Neburq-ed, Aksum's high priest, who works out of a tin shed at a seminary close by the ark chapel. As the church administrator in Aksum, he would be able to tell us more about the guardian of the ark.

"We've had the guardian tradition from the beginning," the high priest told us. "He prays constantly by the ark, day and night, burning incense before it and paying tribute to God. Only he can see it; all others are forbidden to lay eyes on it or even go close to it." Over the centuries, a few Western travelers have claimed to have seen it; their descriptions are of tablets like those described in the Book of Exodus. But the Ethiopians say that is inconceivable—the visitors must have been shown fakes.

I asked how the guardian is chosen. "By Aksum's senior priests and the present guardian," he said. I told him I'd heard that in the mid-20th century a chosen guardian had run away, terrified, and had to be hauled back to Aksum. The Neburq-ed smiled, but did not answer. Instead, he pointed to a grassy slope studded with broken stone blocks—the remains of Zion Maryam cathedral, Ethiopia's oldest church, founded in the fourth century A.D. "It held the ark, but Arab invaders destroyed it," he said, adding that priests had hidden the ark from the invaders.

Now that I had come this far, I asked if we could meet the guardian of the ark. The Neburq-ed said no: "He is usually not accessible to ordinary people, just religious leaders."

The next day I tried again, led by a friendly priest to the gate of the ark chapel, which is about the size of a typical suburban house and surrounded by a high iron fence. "Wait here," he said, and he climbed the steps leading to the chapel entrance, where he called out softly to the guardian.

A few minutes later he scurried back, smiling. A few feet from where I stood, through the iron bars, a monk who looked to be in his late 50s peered around the chapel wall.

"It's the guardian," the priest whispered.

HE WORE AN OLIVE-COLORED ROBE, dark pillbox turban and sandals. He glanced warily at me with deep-set eyes. Through the bars he held out a wooden cross painted yellow, touching my forehead with it in a blessing and pausing as I kissed the top and bottom in the traditional way.

I asked his name.

"I'm the guardian of the ark," he said, with the priest translating. "I have no other name."

I told him I had come from the other side of the world to speak with him about the ark. "I can't tell you

SEAN SPRAGUE / PETER ARNOLD, INC.

At the chapel said to house the ark, a rare opening of the gates occurs on the Feast of St. Mary (above: patriarch Abuna Paulos under the parasol in 2005). But no one except the appointed guardian is allowed to view the ancient vessel.

anything about it," he said. "No king or patriarch or bishop or ruler can ever see it, only me. This has been our tradition since Menelik brought the ark here more than 3,000 years ago."

We peered at each other for a few moments. I asked a few more questions, but to each he remained as silent as an apparition. Then he was gone.

"You're lucky, because he refuses most requests to see him," the priest said. But I felt only a little lucky. There was so much more I wanted to know: Does the ark look the way it is described in the Bible? Has the guardian ever seen a sign of its power? Is he content to devote his life to the ark, never able to leave the compound?

On my last night in Aksum, I walked down the chapel road, now deserted, and sat for a long time staring at the chapel, which shone like silver in the moonlight.

Was the guardian chanting ancient incantations while bathing the chapel in the sanctifying reek of incense? Was he on his knees before the ark? Was he as alone as I felt? Was the ark really there?

Of course I had no way of answering any of these questions. Had I tried to slip inside in the darkness to sneak a look, I'm sure the guardian would have raised the alarm. And I was also held back by the fear that the ark would harm me if I dared defile it with my presence.

In the final moments of my search, I could not judge whether the ark of the covenant truly rested inside this nondescript chapel. Perhaps Menelik's traveling companions did take it and spirit it home to Ethiopia. Perhaps its origins here stem from a tale spun by Aksumite priests in ancient times to awe their congregations and consolidate their authority. But the reality of the ark, like a vision in the moonlight, floated just beyond my grasp, and so the millennia-old mystery remained. As the devotion of the worshipers at Timkat and the monks at Tana Kirkos came back to me in the shimmering light, I decided that simply being in the presence of this eternal mystery was a fitting ending to my quest.

See more pictures from Paul Raffaele's trip at Smithsonian.com/ark

The rain he worried about. The Camel cigarettes he chain-smoked. The letter he wrote in case of failure. Gen. Dwight Eisenhower's defining moment comes to life in an excerpt from **MICHAEL KORDA**'s best-selling new biography

The invasion of Europe began at Normandy, on the coast of France, the morning of June 6, 1944, and continued for 75 days (here: June 7). Less than 48 hours earlier, Eisenhower (opposite) had confided to an aide: "I hope to God I know what I'm doing."

IKE AT D-DAY

ALL OVER ENGLAND the vast task of loading the invasion fleet was going on. Rural roads were lined with ammunition dumps, and huge numbers of vehicles, from heavy tanks to jeeps, motorcycles and bicycles, were being assembled—for the invasion was like an intricate jigsaw puzzle: everything had to be packed and loaded so that it all would come off in the right order on the beaches. Tanks had to be laboriously backed into the LSTs, or landing-ship tanks, so they could come down the ramp onto the beach with their heavier frontal armor facing the enemy and their guns ready to fire; ammunition and medical supplies had to be placed so they would arrive on the beach at the same time as the first troops; hundreds of thousands of two-way radios had to have their frequencies set so they could communicate with each other. The tasks were endless.

Nothing, it seemed, had been left to chance. The only thing over which the supreme commander, Gen. Dwight D. Eisenhower, had no control—was the weather.

All the same, late on the evening of June 5, when the great fleet bearing almost 170,000 men was already at sea, and the paratroopers were already on their way through the dark night sky to their drop zones in Normandy, and the midget submarines were rising to the surface to mark the boundaries of the invasion beaches, Winston Churchill, getting ready to go to bed with tears running down his cheeks, said to his wife, Clementine, "Do you realize that by the time you wake up in the morning, 20,000 men may have been killed?"

ON NO PAIR OF SHOULDERS did these concerns rest more heavily than those of the supreme commander himself. Eisenhower commanded some 3 million men—nearly 1.7 million of them American; 1 million British and Canadian; the rest Free French, Polish, Norwegian, Czech, Belgian and Dutch. This was the largest international alliance ever assembled.

Only two things could stop the invasion. The first was the possibility that the Germans had discovered where and when the landings would take place, but from intercepted German radio traffic and clandestine broadcasts from French resistance groups, there appeared no evidence of this. The enormous fleet put to sea without any sign that the Germans had even noticed it—another consequence of the Allies' control of the air, and another example of the failure of Hermann Göring's *Luftwaffe*. Had some of the new German jet fighters been modified as high-altitude, high-speed photoreconnaissance aircraft like the Royal Air Force's PR Mosquitoes and Spitfires, the fate of the invasion might have been very different; but on Hitler's orders the jet fighters were being converted into light bombers.

The weather, and particularly the tides, were Eisenhower's greater concern. The invasion could take place only when the tides were at their lowest ebb, in order to expose the mined obstacles that Field Marshal Erwin Rommel had placed in the water in such staggering quantities, even though the price for this was to increase the distance the troops would have to cross over open beaches in the face of enemy machine-gun fire once they were onshore. Also, there had to be sufficient moonlight the night before the invasion to enable the transport and glider pilots to find drop zones for the paratroopers and for the paratroopers and glider pilots to see where they were landing.

Low visibility might be an advantage for troops landing on the beaches, but it would hamper airmen flying the bombers and fighter bombers, and perhaps make parachute drops impossible. High winds would raise surf on the beaches and again might make it necessary to cancel the parachute drops; but a totally windless morning would shroud the beaches in smoke and make it difficult for warships to reach enemy targets accurately with their big guns. In short, to succeed, the invasion required a remarkably complex combination of factors, and these would be available only on certain days of each month. June offered only three possible dates: June 5, 6 and 7.

At first, the onslaught had been fixed for dawn on June 5. As the ships were loaded and the troops moved south, Eisenhower himself moved from his headquarters outside London closer to the invasion fleet at Southwick, outside Portsmouth, where Gen. Bernard Montgomery, command-

---

MICHAEL KORDA's *previous books include the biography* Ulysses S. Grant *and a memoir,* Charmed Lives.

From *Ike: An American Hero*, by Michael Korda. Copyright © 2007 by Success Research Corporation. Published by arrangement with HarperCollins Publishers.

P. 48 HULTON ARCHIVE / GETTY IMAGES; PP. 48-49 TIME LIFE PICTURES / GETTY IMAGES; P. 51 BETTMANN / CORBIS; AP IMAGES; U.S. ARMY CENTER OF MILITARY HISTORY

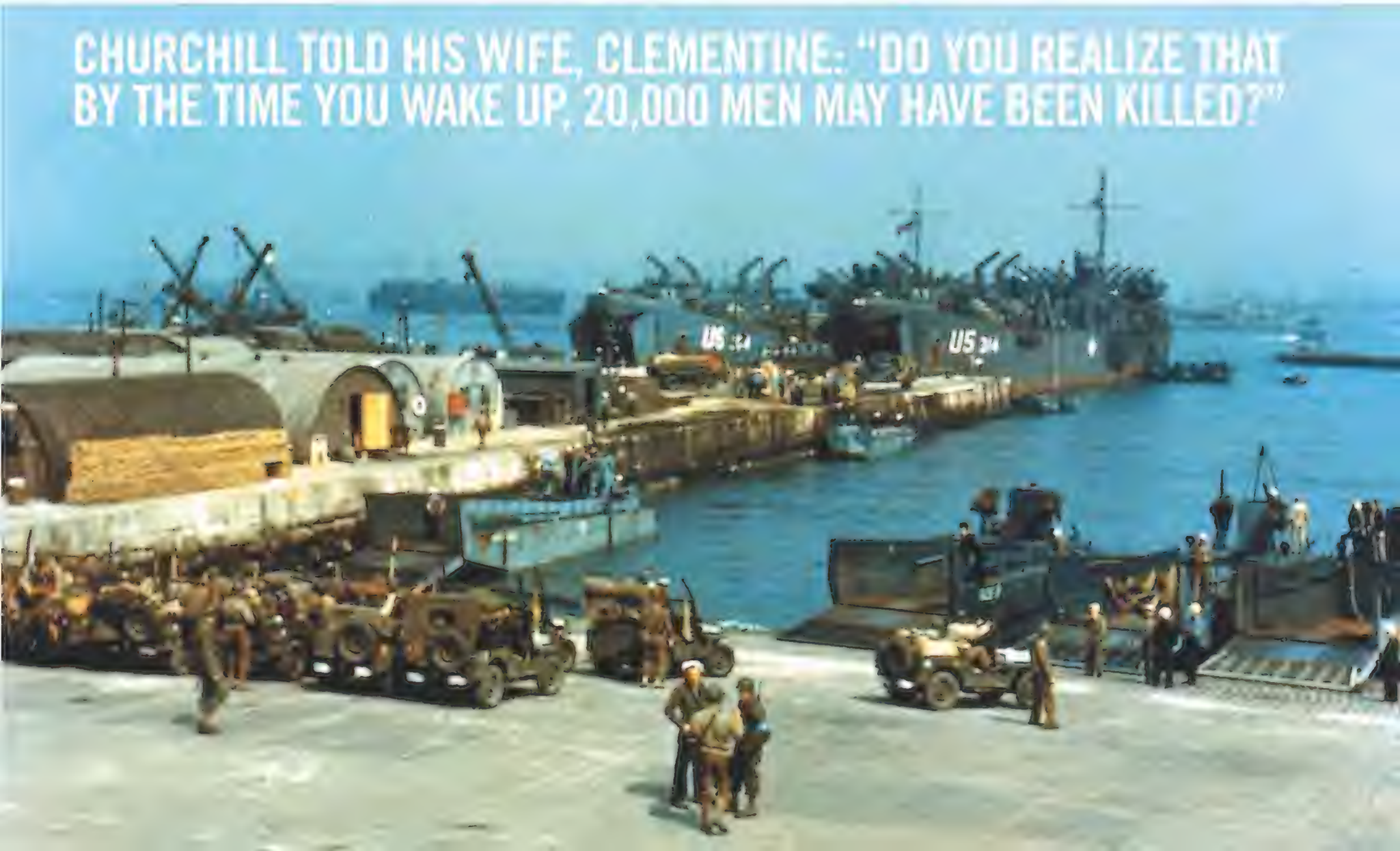
er of ground forces, and Adm. Bertram Ramsay, the naval commander in chief, had their headquarters. By June 1, the intricate operation was in motion: the great battleships were at sea, the men were on the move, the vehicles were loaded and the systematic bombing of key points of the French railroad system was already in progress. The only difficulty was the weather: low clouds, high winds, intermittent heavy rain and rough seas, with more of the same forecast for the foreseeable future.

Late on June 3, Eisenhower reluctantly made the decision to postpone the invasion by 24 hours, from June 5 to June 6, even though much of the invasion force was already at sea, and the troops were packed in the ships like sardines, adding seasickness to their woes. Eisenhower was aware of their misery, and he was even more conscious that every hour the fleet was at sea increased the chance that it might be discovered by a German E-boat or submarine.

The morning of June 4 offered no visible improvement. Rain poured down; wind rattled the windowpanes of the headquarters at Southwick; low clouds scudded past, driven by high winds. The sea was a dark gunmetal gray, with heavy surf breaking on the beaches and a heavy swell farther out, where the ships of the invasion fleet rolled and pitched. Uncomfortable at the best of times, the troopships were now a nightmare, with toilets backed up; men

As D-Day loomed (below: preparations in Britain), Ike sought advice from British prime minister Churchill (right) and top commanders (top: his inner circle at Southwick House). But he alone would set the June 6 invasion date. Postponement, he believed, would pose risks "too bitter to contemplate."

CHURCHILL TOLD HIS WIFE, CLEMENTINE: "DO YOU REALIZE THAT BY THE TIME YOU WAKE UP, 20,000 MEN MAY HAVE BEEN KILLED?"



vomiting anyplace they could; and the sour odor of dense cigarette smoke, vomit and unwashed bodies permeating the low, crowded, dimly lit compartments in which the troops, their bulky equipment and weapons were densely packed. Many of the men actually looked forward to the moment when they could clamber down rope nets into the Higgins boats below and head for shore. They were wrong, however—as they would shortly discover. Being packed into a tiny, open Higgins boat in a rough sea, with waves breaking over the sides, was no picnic; nor was moving down the ramp onto the beach while carrying almost 100 pounds of gear and ammunition straight into steady, well-aimed German machine-gun fire—if you were lucky enough to make it to the beach, that is, rather than being dumped into water above your head by a coxswain too eager to get his boat away to wait until it touched ground, or being blown into the sea when the boat touched a mine or was hit by German artillery fire.

ALL THESE THINGS were on Eisenhower's mind on the morning of June 4. Although Southwick House, the Operations Center at naval headquarters, had been until recently a luxurious mansion, the supreme commander had elected to set up his battle headquarters—consisting of his own trailer, a cluster of tents for conferences, and trailers for his personal staff—in a park a few miles away. The comparative solitude gave Eisenhower a chance to take long walks and think. But he was by no means isolated. The white-and-gold walls of Southwick House were now covered with big maps, on which Wrens (members of the Women's Royal Navy Service) plotted the position of each unit of the invasion fleet to the sound of ringing telephones and clattering teletypes. A red telephone in the spare, cramped bedroom of his trailer linked Eisenhower to a secure, scrambled line to Washington; a green telephone to 10 Downing Street; a black one to his chief of staff, Maj. Gen. W. Bedell Smith.

Despite all this, Eisenhower was under no obligation to consult with anyone. His orders read simply, "You will enter the continent of Europe and, in conjunction with the other United Nations, undertake operations aimed at the heart of Germany and the destruction of her armed forces." The decision to invade, to postpone, even to call off the invasion if need be, was his and his alone.

Perhaps the only sign of Ike's nervous tension was the increasingly rapid rate of his chain-smoking. Every ashtray in the trailer was full to overflowing with smoldering ashes, one of his staff noticed, as the general restlessly lit one Camel cigarette from another without stubbing out the first, pausing only to take another gulp of black coffee. From time to time, he stood up, put his hands on his hips and stared out the window of the trailer at the rain, or stood at the door of the trailer and looked up at the sky.

He knew that by the end of the day he would have to make the decision about whether to go on June 6. Through most of the day, Eisenhower stayed in his trailer, occasionally leaving to take a walk, waiting restlessly for the weather to change. It was still windy and pouring rain that evening when he left for Southwick House.

Waiting for him in the library were his senior commanders and their chiefs of staff—12 uniformed men in all, though Montgomery wore his trademark baggy corduroy trousers and roll-neck pullover. The big library had once been an elegant room, but the bookshelves were empty now, and most of the furniture had been removed. A large table covered with green baize cloth was placed in the center of the room. Heavy blackout curtains covered the windows but did little to keep out the noise of wind and rain.

Promptly at 9:30 Eisenhower entered the room and asked the others to sit down. There was no small talk. They all knew why they were there and shared the same concerns. There was a haze of tobacco smoke in the room—it was an age when almost everybody smoked, except Montgomery, who rarely allowed anybody to smoke in his presence except King George VI, Churchill and Eisenhower. The door opened and the three senior meteorologists came in, led by their chief, RAF Group Capt. J. M. Stagg.

Stagg began on a note of cautious optimism: weather aircraft far out over the Atlantic had detected a high-pressure front moving rapidly east. Tomorrow, June 5, would see periods of gradual clearing over southern England and the invasion beaches, with dropping winds. These conditions would improve through the night of June 5, enabling bombers to operate and airborne operations to take place, and would continue through the morning of June 6; but later in the day, conditions would begin to deteriorate. In short, there would be a window of 24 hours or less.

Once Stagg and his staff had been dismissed, Eisenhower asked his commanders to give him their opinions. Predictably, the air commander, Trafford Leigh-Mallory, was pessimistic about the airborne operations, having already expressed his fear that they would result in a disastrous blood bath. Leigh-Mallory had been a pessimist about the airborne operations from the start, even if weather conditions were perfect—to the great annoyance of the British and American airborne commanders, who were impatient for an opportunity to demonstrate that large-scale parachute and glider operations were feasible at night. Failure to play a major—and successful—role in the coming invasion would very likely lead to the airborne units' being broken up to provide replacements for regular infantry units, so not just honor but survival was at stake.

Montgomery was succinct as usual. "I would say go," he said simply.

A. W. Tedder, Eisenhower's deputy, for once agreed with his fellow air marshal Leigh-Mallory. This must have dismayed Eisenhower, who placed a good deal of confidence in Tedder's judgment. Leigh-Mallory's opinion would not have surprised him—indeed, Eisenhower had already had a long and painful conversation with Leigh-Mallory, during which he had warned him that while he was entitled to his

P. 53 HULTON ARCHIVE / GETTY IMAGES (2); AP IMAGES

opinion, he must not let it affect the troops' morale—but Tedder's doubts were something Eisenhower would have to take more seriously.

It was left to Admiral Ramsay to give the group the naval facts of life. If the invasion was postponed again, he pointed out, it would be necessary to bring many ships back to refuel. A naval operation of that size, spread across ports all over southern England, might easily be picked up by the Germans. In any case, it would take far more than 24 hours to refuel the ships and get them back in place again. If the invasion did not go forward on June 6, he saw no practical likelihood that it could do so on June 7—it would have to be postponed until late in June or sometime in July.

Postponing the invasion by another 24 hours was bad enough, but postponing it until the end of June or the first week of July would be catastrophic. Politically, it would reawaken Joseph Stalin's not altogether dormant suspicion that the invasion would never take place; both President Franklin Roosevelt and Churchill were anxious to avoid such a reaction. Militarily, the risks were worse. Could 170,000 men be brought back to England without being noticed by a German spy or without starting rumors? And what would be the effect on morale? Most of the men had already been briefed about the invasion beaches, which meant they would have to be held virtually incommunica-

Final preparations (top: in England) sent 170,000 men to France (right: shorebound troops, June 6). On June 5, Ike (below) met with the paratroopers who would secure the invasion's flanks. "It's very hard," he said, "to look a soldier in the eye when you fear that you are sending him to his death."

IKE JUST STARTED WALKING AMONG THE MEN. WHEN THEY REALIZED WHO IT WAS, EVERYONE WENT CRAZY. THE ROAR WAS UNBELIEVABLE.

The same foul weather that so worried Ike proved the Germans' undoing. Believing an invasion in rain and mist unthinkable, Field Marshal Gerd von Rundstedt (right) granted his deputy, Field Marshal Erwin Rommel (left: on French coast, March 1944), leave.

do on their airfields, in their barracks or on their ships. Postponement until July, Ike thought, was simply "too bitter to contemplate" and probably impossible.

There was a long silence, broken only by the spatter of rain against the windows, the noise of the wind and the ticking of a clock. Eisenhower sat at the baize-covered table, his hands clasped in front of him, while the others waited for him to speak. It was Eisenhower's decision now, and even Montgomery, usually keen to press his own case, sat silently, looking at him.

Nearly five minutes passed, and then Eisenhower said in a low voice, "I am quite positive we must give the order. . . . I don't like it, but there it is. . . . I don't see how we can do anything else."

Then he stood up and walked to the door. The order had been given.

The invasion would take place on the sixth of June.

WHEN ASKED what kind of generals he liked, Napoleon is said to have replied, "Lucky ones." Nobody in the room could have known it, but luck was about to strike Eisenhower.

Across the English Channel, the Germans were suffering, once again, from the difficulties of the Luftwaffe. Unlike the British and the Americans, the Germans had no aircraft that could safely patrol the Atlantic beyond Iceland to report on the weather. As a result, the high-pressure front that Stagg had reported to Eisenhower was unknown to them. Their meteorological forecast was for the bad weather to continue uninterrupted through June 6 and beyond—poor visibility, low cloud cover, rain, high winds, a heavy swell at sea, and strong surf on the French beaches.

Field Marshal Gerd von Rundstedt concluded that nobody in his right mind would order an invasion as long as the weather remained bad. That being the case, he set off with his immediate staff for a four-day inspection tour, and allowed Field Marshal Rommel to take a few days of leave. Rommel wished to spend his wife's birthday, June 6, with her in Germany, and he left early in the morning of June 4 in his Horch touring car, sitting in front, with his chauffeur, Daniel, at the wheel and two of his staff officers seated behind him. His birthday present for his beloved Lucie was beside him on the seat: a pair of elegant suede shoes he had bought in Paris—for even in the fourth year of the German occupation, Paris remained the center of haute couture, the

BETTMANN / CORBIS; AP IMAGES

place where everybody who could afford to do so still came to buy shoes, gloves, perfume, hats and lingerie. Even the commander of the 21st Panzer Division, Gen. Edgar Feuchtinger, a fanatic Nazi and a particular favorite of Adolf Hitler's, decided that it would be safe to spend the nights of June 5 and 6 in Paris with his mistress.

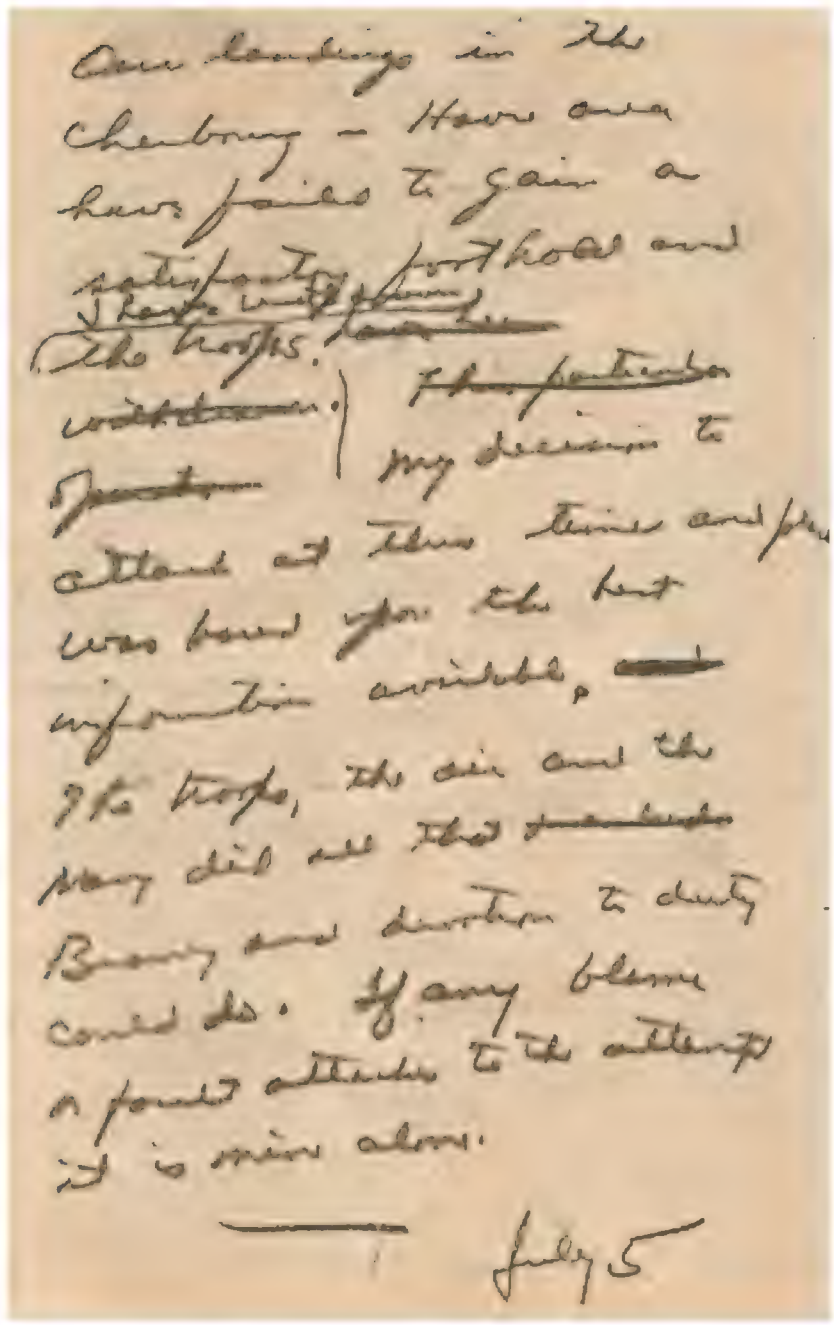
As for the Führer, he too was taking a vacation, at his home in Berchtesgaden, high above the Obersalzburg, accompanied by his staff and his mistress, Eva Braun.

EISENHOWER'S tiny trailer bedroom was littered with ashtrays and paperback westerns—virtually his only form of relaxation. Having made his decision, he left his commanders at Southwick House to get on with implementing it and went back to the trailer for a few hours of sleep. He was not the kind of man to waste time second-guessing himself once a decision was made.

All over Britain, the decision that Eisenhower had made at 9:45 had triggered a frenzy of activity. RAF bombers were revving up their engines to strike vital targets in France, while all across southern England, thousands of transport aircraft had to be given last-minute checks, as well as the gliders aligned in long rows, just so, with their long towlines arranged in a zigzag pattern in front of them; everywhere ground crews worked through the night, loading bombs, rockets and long belts of ammunition into combat aircraft—the belts of .50-caliber ammunition for the heavy machine guns of the American bombers were 27 feet long (whence the expression "the whole nine yards"). Troops moved south by rail and truck toward the embarkation ports, following a complicated schedule that would take them and their equipment in phases to the beaches once these had been secured on D-Day. The British midget submarines that had been in place off the beaches, resting on the sea bottom since June 4—their crews now suffering from cramps, exhaustion and lack of air inside the tiny, crowded hulls—were given, at last, the order to surface before dawn on June 6 and raise a telescopic mast with a signal light, to mark the boundaries of the five invasion beaches for 7,000 ships in five separate fleets.

Eisenhower woke early in the morning of June 5 to the familiar sound of rain and wind. He had slept soundly, but apparently the thought that the invasion might fail was on his mind, for the moment he was dressed, he sat down at his little desk in the trailer and wrote out a kind of brief aide-mémoire of what he would tell the news correspondents if it did. This is one of the most extraordinary documents of the war, dignified, modest and truthful. Eisenhower takes on himself full responsibility for the failure:

Our landings in the Cherbourg-Havre area have failed to gain a satisfactory foothold and I have withdrawn the troops. My decision to attack at this time and place was based upon the best information available. The troops, the air, and the Navy did all that bravery and devotion to duty could do. If any blame or fault attaches to the attempt it is mine alone.


Our landings in the Cherbourg – Havre area have failed to gain a satisfactory foothold and I have withdrawn the troops. My decision to attack at this time and place was based upon the best information available. The troops, the air and the Navy did all that bravery and devotion to duty could do. If any blame or fault attaches to the attempt it is mine alone.

July 5

For a statement he wrote accepting blame should the invasion fail, an anxious Ike dated his draft July, not June, 5.

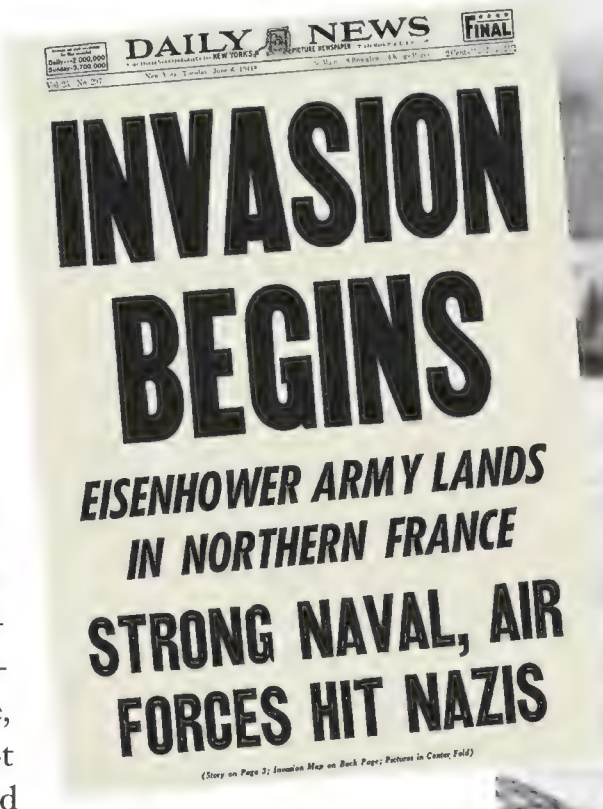
He folded the piece of paper carefully, put it in one of the breast pockets of his short uniform jacket (already known as an Eisenhower jacket) and buttoned the flap. It was there if needed—he would not be at a loss for what to say if the worst happened. Then he went off to a final, last-minute briefing, at which Stagg gave yet another cautiously optimistic weather forecast.

Eisenhower spent most of the day in his trailer, receiving a steady stream of what were beginning to be called VIP visitors—among them Churchill and Gen. Charles De Gaulle. The rain slowly diminished, the cloud cover began to lighten and the wind dropped.

In late afternoon, Eisenhower decided to visit the airborne troops, who would soon be loading up. It was about them that Eisenhower had the sharpest concern. Nobody had ever attempted a night drop on this scale before, and Leigh-Mallory had predicted that casualties might be as high as 80 percent. From the beginning, Eisenhower had insisted on the airborne drops, despite the possibility of catastrophic losses, since these drops were the only way to secure both flanks of the invasion during the first few crucial hours, when the troops on the beach would be at their

DWIGHT D. EISENHOWER PRESIDENTIAL CENTER

most vulnerable, trying to fight their way through the German defenses inland. Eisenhower had faced the problem squarely: if the three airborne divisions—one British, two American—had to be sacrificed to make the invasion possible, so be it. He hated the idea; he hoped that Leigh-Mallory was wrong; but the airborne drops were indispensable to success. On the other hand, he felt the need to go and see the men whose lives he might be sacrificing and look them in the eyes; and he felt, too, perhaps, that the sight of him would reassure them.


DAILY NEWS
FINAL
INVASION BEGINS
EISENHOWER ARMY LANDS IN NORTHERN FRANCE
STRONG NAVAL, AIR FORCES HIT NAZIS
(Story on Page 3; Invasion Map on Back Page; Pictures in Center Fold)

Shortly before 6, he stepped into his olive-drab Packard, with Kay Summersby, who by now had become his driver, hostess, social secretary and confidante, at the wheel. He told her not to fly the flag from the hood of the car and to cover up the plates bearing his four stars—he wanted no pomp or ceremony. As they set off, the weather began to clear, the sky turning a glorious red as the sun set. "Red sky at night, sailor's delight," Summersby recited to herself as she watched it and felt a stirring of optimism.

It was nearly 50 miles from Portsmouth to Newbury, where the U.S. 101st Airborne was spread out at several airfields, some of the men getting ready to board waiting C-47s, others to board the gliders that would be towed by the transport aircraft. Greenham Common was the first airfield Eisenhower visited, and 31 years later, Summersby would remember the troops cheering, whistling and shouting, "Good old Ike!" as the supreme commander appeared.

"Ike," she remembered, "got out and just started walking among the men. When they realized who it was, the word went from group to group like the wind blowing across a meadow, and then everyone went crazy—the roar was unbelievable. . . . There they were, these young paratroopers in their bulky combat kits with their faces blackened so that they would be invisible in the dark of the French midnight. Anything that could not be carried in their pockets was strapped on their backs or to their arms and legs. Many of them had packages of cigarettes strapped to their thighs. They looked so young and brave. I stood by the car and watched as the General walked among them. . . . He went from group to group

By 7 a.m. on June 6, the first troops (right: infantry troops prepare to go ashore) waded onto the beaches. By 9:30 a.m., Eisenhower, knowing the assault was succeeding, authorized his press aide to announce that Allied armies had begun "landing . . . this morning on the northern coast of France."

and shook hands with as many men as he could. He spoke a few words to every man as he shook his hand, and he looked the man in the eye as he wished him success. 'It's very hard really to look a soldier in the eye,' he told me later, 'when you fear that you are sending him to his death.'"

Summersby drove Eisenhower to two more of the 101st Airborne's airfields, but then there was no time left to continue, so she drove him back to Greenham Common to watch the aircraft there take off. It was dark now, but an American correspondent saw tears running down Eisenhower's cheeks as he watched, one after another, the C-47s roll down the runway and vanish into the night.

On the way back to Southwick in the car, he said to Summersby, "I hope to God I know what I'm doing."

Eisenhower (with Kay Summersby at headquarters in Reims, France, May 7, 1945) celebrated his success.

AT 6:30 in the morning, underwater demolition engineers ("frogmen") began to demolish the mined obstacles that protected the beaches, and the first "swimming tanks" were already going onshore to support the infantry. By 7, the assault troops in the first wave were beginning to wade through waist-high water onto the beaches, while overhead a fearsome naval bombardment—the heaviest in history—began to pound German defenses from Cabourg on the left to Quinéville on the right. A German officer reported back to his headquarters that he was looking at "ten thousand ships," and was warned not to exaggerate; but gradually, as the full extent of what was happening made its way up the German communications system, doubt was extinguished except at the very top.

Field Marshal von Rundstedt, breakfasting at his headquarters outside Paris, still thought that the landings were a diversion, and that the real invasion would take place in the Pas de Calais, though he took the precaution of alerting two of four Panzer divisions. Hitler was asleep in Berchtesgaden; his naval aide decided not to wake him until more information was available. Field Marshal Rommel was home in Herrlingen, and in the confusion nobody thought to call him until 10:15. He alone understood at once that this was not a diversion, but the real thing—the invasion he had been preparing for. "How stupid of me," he repeated as his aide gave him the details over the phone. By 1 in the afternoon, he was in his car on the way back to France, urging his driver on—*Tempo! Tempo! Tempo*! (Faster! Faster! Faster!) he called out, as the big Horch sped down the road.

Cautiously, the most Ike would say was that the landings were going "fairly well"; but at 9:33 in the morning he at last ordered his press aide, Col. Ernest Dupuy, to announce: "Under the command of General Eisenhower, Allied naval forces, supported by strong air forces, began landing Allied armies this morning on the northern coast of France."

Characteristically, Ike did not make the announcement himself, but this made no difference—around the world people stopped what they were doing to listen to the radio. In Britain work ceased and men and women stood and sang "God Save the King" spontaneously. In Philadelphia the Liberty Bell was rung, and church bells rang out in jubilation all across the United States, the United Kingdom and Canada. In America so many people called friends and families to tell them the news that telephone switchboards were jammed across the nation. In the House of Commons, Churchill, artfully keeping the members in suspense as he told them of the liberation of Rome, said, at last, "I have also to announce to the House that during the night and the early hours of this morning the first of the series of landings in force upon the European continent has taken place—in this case the liberating assault fell upon the coast of France." He went on to say, "There is a brotherhood in arms between us and our friends of the United States. . . . There is complete confidence in the Supreme Commander, General Eisenhower." From all over the world—except, as Churchill would say, "in the abodes of the wicked"—congratulations poured in. Even Stalin cabled, "It brings joy to us all." The normally staid *London Times* commented, "At last the tension has broken."

Eisenhower was vindicated in his belief that an airborne operation was critical to the success of D-Day. Some 18,000 paratroopers were dropped overnight behind German lines to secure the flanks, enabling the invasion to go forward. Although the nearly 80 percent casualty predictions did not materialize, some 3,700 of the 23,000 airborne troops sent into combat on the night of June 5 and on D-Day itself were killed, wounded or missing.

As for the men who made the initial assault on the beaches of Normandy: total Allied losses that day have never been totally confirmed, but appear to have been more than 10,000, with American losses, including the paratroopers, totaling 6,577.

BETTMANN / CORBIS; P. 56 NEW YORK DAILY NEWS; PP. 56-57 HULTON ARCHIVE / GETTY IMAGES

Lifetime renewal guarantee is available to policyholders with the GEICO Prime Time Policy. To qualify, policyholders or their spouses must be over 50. All operators of vehicles insured under the policy must be at least 25 and physically and mentally able to safely operate an automobile. Prime Time Policy is not available in all states.

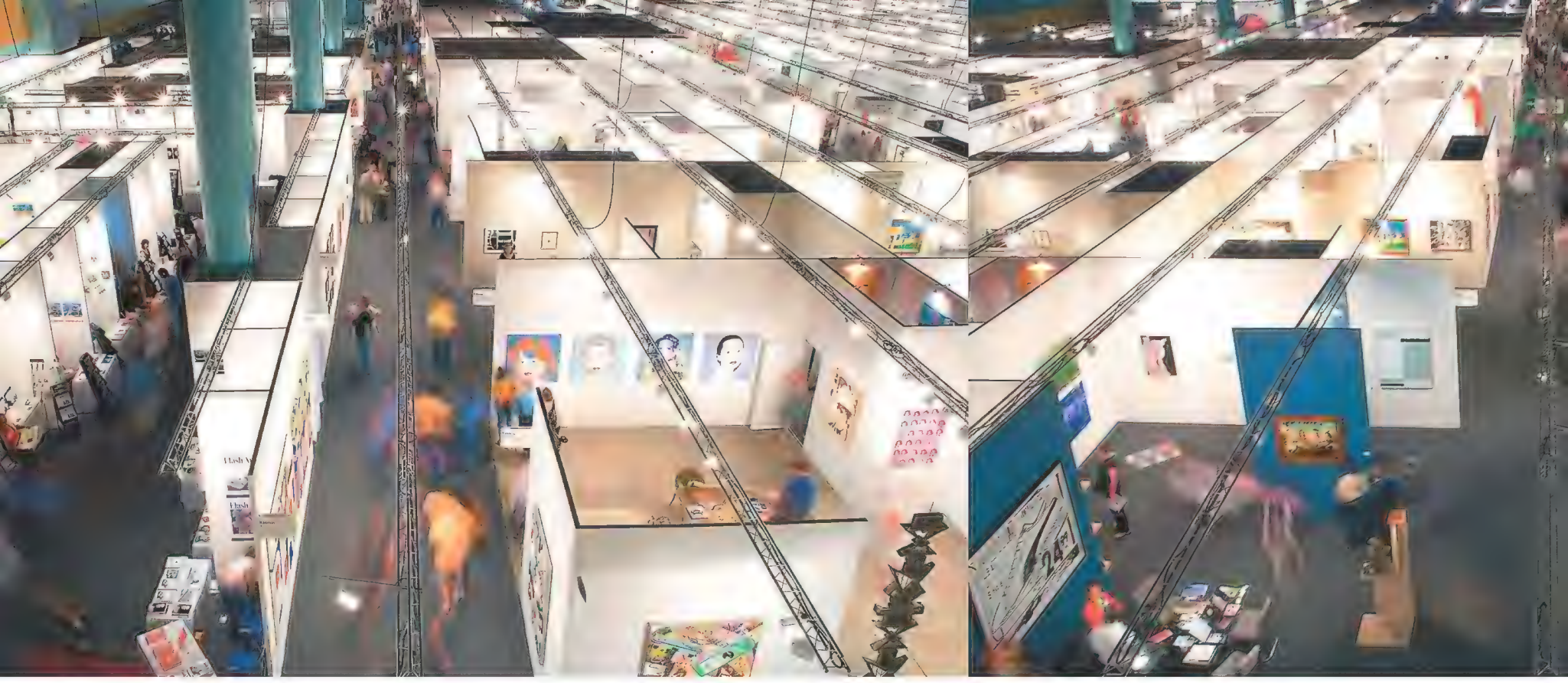
Average savings based on GEICO New Policyholder Survey Data through February 2007. Some discounts, coverages, payment plans, and features are not available in all states or in all GEICO companies. Government Employees Insurance Co. • GEICO General Insurance Co. • GEICO Indemnity Co. • GEICO Casualty Co. These companies are subsidiaries of Berkshire Hathaway Inc. GEICO auto insurance is not available in Mass. GEICO: Washington, DC 20076. © 2006-07 GEICO

MIAMI SPLASH

Each December, tens of thousands of dealers, collectors and enthusiasts gather for Art Basel Miami Beach, the giant fair that's fueling the city's explosive arts scene

BY PHOEBE HOBAN

The *New York Times* has called Art Basel Miami Beach (Dec. 6-9 this year) "arguably the hottest trade fair in the hemisphere." The annual contemporary art mart draws an international audience (Venezuelans Adrian Bujol, left, and Umberto Bebe take in exhibits at the 2006 fair's main venue). At Positions (top, left), a satellite site, art is displayed in shipping containers on the beach.



MIAMI HAS HAD ITS MOMENTS.

In the 1980s it was "Miami Vice"—remember Don Johnson's five o'clock shadow and T-shirt-cum-blazer? In the 1990s it was South Beach, when seedy old Art Deco hotels blossomed into glamour destinations, luxury condos mushroomed all over town and supermodels rollerbladed along the beach. But since 2002, the year of the first Art Basel Miami Beach, it has been the city's art moment.

When the Miami Beach Convention Center opens its doors to the public on December 6 for the annual four-day Art Basel expo, a tsunami of artists, dealers, collectors, critics, curators and art-world followers will flood the 262,960-square-foot exhibition space to ogle, and possibly buy, everything from Impressionist landscapes and Cubist collages to neon sculptures and avant-garde video art—220 booths displaying the works of some 2,000 artists from 30 countries.

"Art Basel Miami Beach has one of the planet's highest concentrations of wealth and talent," boasts fair director Samuel Keller. "It's an explosive mixture of art, intellect, glamour and money." The art mart (a spinoff of the international fair held annually in Switzerland) has some of the glitz of Hollywood's Oscars, but it has also become one of the key events of the art-world calendar, a place where trends get set, deals get done and names get made—even if it has been criticized for its frenzied atmosphere and rampant commercialism. The *New York Times* has called it "an Art Costco for billionaires," and conceptual artist John Baldessari, whose work is marketed at the fair, observes: "You have to understand that it's not about mounting an art show, it's about selling art." But, he adds, "It's a chance to see a lot of good art in one place, even if it's not under optimum conditions."

"Art collectors love the sort of mall experience that art fairs provide," says Walter Robinson, editor of *Artnet Magazine*. "You walk down aisles and there's pressure to buy because the collectors know that there are other collectors there vying for the same choice artworks and they know they've only got a few days, if that, to make their move."

Why Miami Beach? "It seemed a good place to bring together the art scenes of the Americas and Europe in winter," says Keller, who is also one of the fair's founders as well as the director of Switzerland's fair. "The city was open and ready for a new international art show with a contemporary concept, and the South Florida art community was willing to actively support and embrace it."

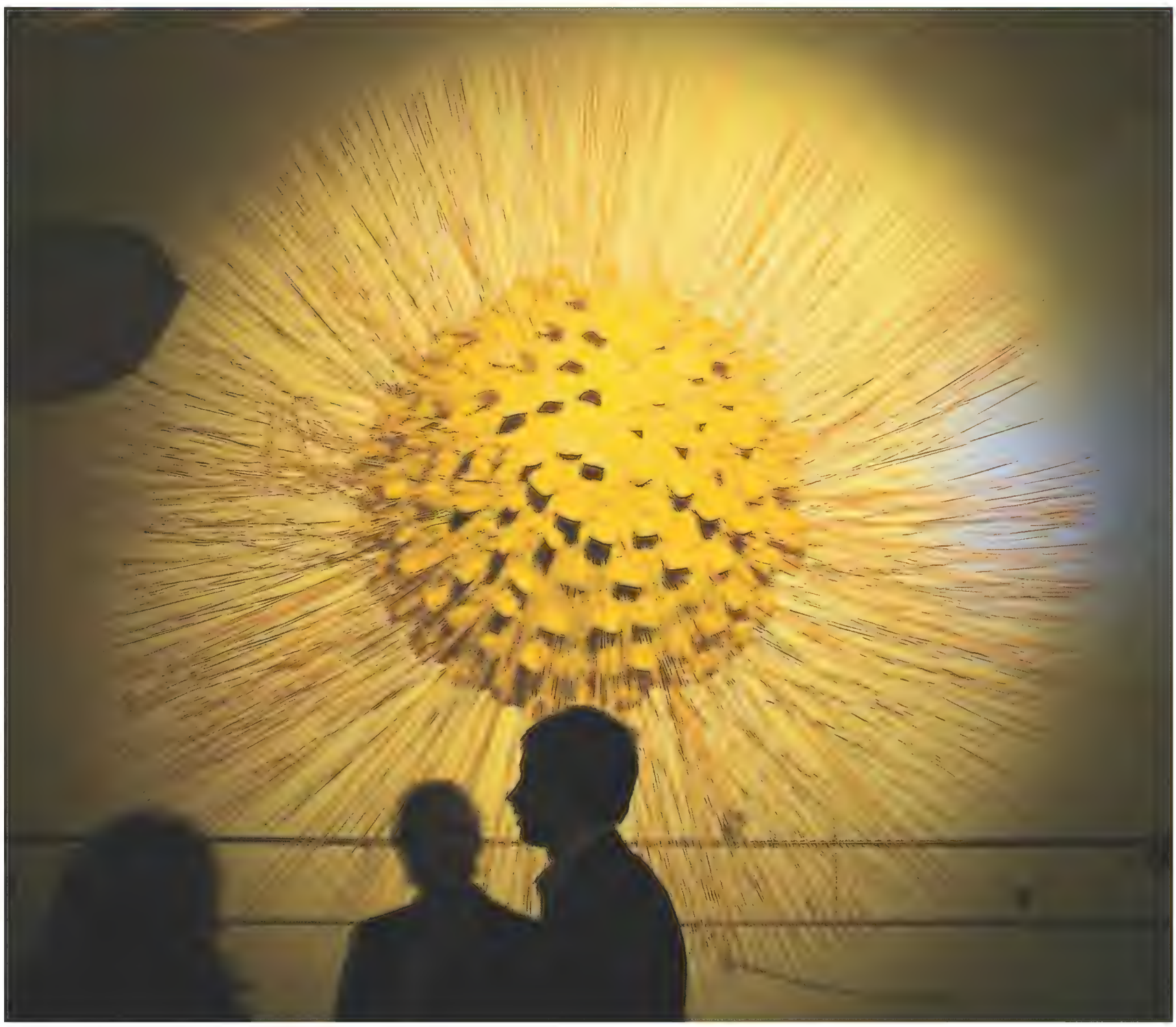
While most of the action takes place at the convention center, there are a dozen or so subsidiary fairs—Pulse, Scope NADA, Aqua and Wave, among others—that have sprung up in Miami Basel's wake. An ancillary Design Miami fair, across Biscayne Bay in Miami's booming Design District, showcases furniture, lighting, antiques and objets d'art.

Sparked by Art Basel, Miami's art scene is enjoying a rapid escalation. Galleries in the Wynwood Art District, not so long ago a run-down area of old industrial buildings, warehouses and factories, are opening left and right. And two of the city's largest museums have announced ambitious expansion plans. The Miami Art Museum (MAM) is building a new $220 million space downtown, and North

Freelance journalist **PHOEBE HOBAN** *writes about culture and the arts for the* New York Times, ArtNews *and other publications.*

ORJAN F. ELLINGVAG / DAGENS NARINGSLIV / CORBIS; P. 60 MESSE SCHWEIZ; PP. 60-61 MITCHELL ZACHS / AP IMAGES

At the cavernous Miami Beach Convention Center, booths representing some 220 galleries from around the world will display and market the work of about 2,000 artists from 30 countries. More than 40,000 people attended last year's event (above). "It's an explosive mixture of art, intellect, glamour and money," says fair director Samuel Keller (opposite). Many of the growing number of local galleries also mount special shows (below, a 2006 exhibit by conceptual artist Federico Uribe at La Comunidad in Wynwood).



JOHN LOOMIS; PP. 62-63 JOHN LOOMIS

Miami's Museum of Contemporary Art (MOCA) will nearly double in size. The city's art mania is also due in no small part to a handful of energetic collectors.

Mera and Don Rubell, for example, moved to Miami from New York City in 1993. Three years later they converted a 40,000-square-foot former Drug Enforcement Agency building in Wynwood into a gallery for their contemporary art collection. For the first few years, viewing was by appointment only, but in 2000 the gallery opened to the public on a regular schedule. Four years later, the Rubells renovated the warehouse, doubling its exhibition space and adding a sculpture garden, café and library. Wynwood now boasts some 70 galleries and art spaces. "We used to be the only ones here," says Mera Rubell. "Now we hand out maps."

The founding in 1999 of the Margulies Collection at the Warehouse by real estate tycoon and arts patron Martin Margulies (whose private collection includes Rothkos, De Koonings and Miros) was another factor in the transformation of Wynwood. The 45,000-square-foot Warehouse specializes in video and installation art and photography. In a normal week, the exhibits might attract 200 people, but during last year's Art Basel Miami, some 7,000 came to see such highlights as spice-filled biomorphic sculptures by Brazilian artist Ernesto Neto, a fabric sculpture of a bathroom by Korean artist Do-Ho Suh and Works Progress Administration photographs by Walker Evans. In October, the Warehouse inaugurated an exhibition of sculpture from Margulies' private collection of such artists as Isamu Noguchi, Richard Serra and the late Sol LeWitt.

During Art Basel, collectors Rosa and Carlos de la Cruz open their waterfront residence on Key Biscayne by appointment. The home is an apt setting for their contemporary art collection, which includes pieces by the late Cuban conceptual artist Felix Gonzalez-Torres and Mexican post-Minimalist Gabriel Orozco. For last year's installation during Art Basel Miami, the couple featured works by mixed-media installation artist Christian Holstad, German artist Sigmar Polke and painter Peter Doig. Their plans for this year's fair include a room devoted to the paintings of the young New York-based art star Dana Schutz.

In 2001, Rosa de la Cruz and developer and collector Craig Robins founded Moore Space, a not-for-profit exhibition venue in the Design District that regularly features contemporary art shows. Now de la Cruz has another project in the works—a 28,000-square-foot art space in the Design District to house her permanent collection so that it will be more easily accessible to the public.

Each year for Art Basel, Dennis and Debra Scholl, whose collection includes contemporary art and photography—from an eye-catching staircase emblazoned with bright-colored strips of tape by artist Jim Lambie to conceptual works by photographer and installation artist Olafur Eliasson—ask a curator to organize a selection of works in their bayside home. They also have a gallery they call World Class Boxing, in a former boxing gym in Wynwood, where they show large-scale installation art by the likes of Dutch video artist Aernout Mik.

THE WOLFSONIAN MUSEUM, which occupies a refurbished 1920s former storehouse amid the restaurants and hotels of South Beach, contains some 100,000 industrial design objects, prints, paintings and sculptures dating from 1885 to 1945—all collected by its founder, Micky Wolfson, heir to the Wometco movie theater and amusement park fortune. On the second floor, there's even a 1930 train station lobby that Wolfson found in Milan. "Our mission is to look at design as a cultural agent," says curator Marianne Lamonaca. "To look at the impact, both obvious and more subtle, that design has on our daily life—whether in architecture, everyday objects or advertising." In 1997 Wolfson donated his entire collection and the building that houses it to Florida International University.

North Miami's MOCA is about to get an $18 million addition, designed by its original architect, Charles Gwathmey. For Miami Basel this year, the museum is mounting the first comprehensive U.S. exhibition of the work of Los Angeles-based artist Jorge Pardo. "The Miami art scene is really hitting stride and maturing," says MOCA director Bonnie Clearwater. "The city's institutions are starting to reach the critical mass that will provide the same kind of excitement of Art Basel Miami Beach on a year-round basis."

MAM, which began establishing a permanent collection only ten years ago, is generating the most buzz. Founded in 1996, the museum currently occupies an unassuming stucco building on Flagler Street in downtown Miami. Enter Terence Riley, the former curator of

Collector and developer Craig Robins (above, on the roof of his offices in the Design District) helped spur the renewal and expansion of the Design District. Opposite, clockwise from top left: Dennis and Debra Scholl prepare for a new exhibition at their Wynwood gallery; artist Jim Lambie covered a staircase in the Scholls' home, open during Art Basel, with colored tape; collector Rosa de la Cruz also opens her home by appointment at fair time; the Margulies Collection at the Warehouse exhibits year-round.

JOHN LOOMIS; P. 65 TOP RIGHT: ORJAN F. ELLINGVAG / DAGENS NARINGSLIV / CORBIS; JOHN LOOMIS (3)

WERNER

Miami's burgeoning art scene may ultimately make the city a year-round art destination. (Clockwise from top left: an oversized, outdoor model living room designed by Miami Beach architects Roberto Behar and Rosario Marquardt in the Design District; the Miami Art Museum as it is today; a model of MAM's proposed new space; and North Miami's Museum of Contemporary Art, which is about to double its size.) For the time being, though, Art Basel Miami Beach remains the main attraction.

architecture and design at New York City's Museum of Modern Art (MoMA). Riley, who was one of the key people involved in MoMA's $858 million renovation, completed in 2004, was appointed director of MAM in 2006, and he is now charged with overseeing the creation of its new museum. Designed by the Swiss firm Herzog & de Meuron (the architects responsible for the Tate Modern in London, the expanded Walker Art Center in Minneapolis and San Francisco's new de Young Museum), the 125,000-square-foot building will occupy a four-acre downtown site overlooking the bay. "I don't want to build an iconic museum," Riley says. "I want to build a great museum. I want to do it the old-fashioned way, and if for all the right reasons it becomes an icon, that's great." Riley plans to unveil models of the new building during Art Basel Miami this year.

Last December, MAM and collector Ella Fontanals-Cisneros, who in 2003 founded Miami Art Central (MAC)—an innovative exhibition space for contemporary art in Coral Gables—announced a merger between MAM and MAC. "This city really needs a great anchor museum," says Fontanals-Cisneros. "Miami has been growing very fast, but it is still lacking that big part of the picture."

Other new spaces are on the horizon. Real-estate developer and collector Craig Robins recently moved his company, Dacra, to a building in the Design District that has plenty of room to display his art. "By the time Miami Art Basel opens," he says, "there will be three other new buildings here. And Gibson Guitars has opened a 10,000-square-foot studio, where musicians can hang out and where there will be small recitals. There are a lot of things that are combining in this neighborhood that will transform the way we think about design."

There's no question, says Mera Rubell, the collector, "that the city's art scene is evolving. Last March, MoMA's International Council brought 80 museum patrons here for a tour of Miami and all the collections. Would that have happened ten years ago? Probably not."

For Rubell, the best evidence of change is the art itself and the artists who are making it. "What excites us is that for this Art Basel, our collection will feature an exhibition of the work of a home-grown artist—painter Hernan Bas," she says. "As far as I'm concerned, the artist is the real fruit of the tree. And the fact that we can mount an exhibit like this proves that we already have the beautiful ripe fruit, and that everything has come full cycle."

CLOCKWISE FROM TOP RIGHT: MIAMI ART MUSEUM; HERZOG & DE MEURON / MIAMI ART MUSEUM; JOHN LOOMIS (2)

For a listing of some of 2008's other international art festivals see Smithsonian.com/festivals

ADVERTISER DIRECTORY

For information, circle the corresponding number(s) on the attached card, and mail or fax response to (585) 321-0043.
Visit Smithsonian Reader Service ON-LINE at www.smithsonian.com/advertiserdirectory

TRAVEL

1. American Canadian Caribbean Line. Explore historic US/Canadian inland and coastal waterways by casual smallship. 100 guests, 5-15 nights. www.accl-smallships.com

2. American Cruise Lines. Smooth water cruising along the magnificent east coast aboard a brand new fleet of ships.

3. Avalon Waterways. Avalon Waterways brings you the best river cruising experience on water and land. Circle the Avalon number on the attached card for a brochure. www.AvalonWaterways.com

4. Caravan Tours. Fully Escorted Tours $995. #1 value in the Americas. 800-CARAVAN, www.caravan.com

5. Cosmos Vacations. Experience the best value in guided travel with Cosmos. For a free brochure, circle the Cosmos Vacations number on the attached card. www.cosmos.com

6. Globus Vacations. Every escorted Globus journey tells a story that will delight all travelers. For a FREE brochure, circle the Globus vacations number on the attached card. www.globusjourneys.com

7. The Great State of Texas. Discover a vacation you never knew existed in your FREE Texas State Guide. www.TravelTex.com

8. Monograms. With Monograms vacation packages, we handle the details, you have all the fun. For a FREE brochure circle the Monograms number on the attached card. www.MonogramsTravel.com

9. New Brunswick, Canada. No small wonders... Walk on the ocean floor in New Brunswick, Canada's Bay of Fundy, home of the World's Highest Tides!

10. Newfoundland & Labrador. Travel back 1,000 years to North America's only authentic Viking settlement at the L'Anse aux Meadows UNESCO World Heritage Site. Free Traveller's Guide at 800-563-6353 or NewfoundlandLabrador.com

11. Nova Scotia Tourism. To find out everything Nova Scotia has to offer, visit us online at novascotia.com/landmark or call 800-565-0000 OP 445.

12. Smithsonian Journeys. Love to travel? Love to learn? Take the Smithsonian on your next trip. www.SmithsonianJourneys.org

13. Washington, DC: The American Experience. Discover your culture capital from its monumental arts scene to its inspiring monuments. For info & packages visit washington.org, 800-422-8644.

A. All of the Above Category

APPAREL

14. Bow Tie Club. Full color catalog featuring the finest quality silk bow ties handcrafted in Maryland. www.bowtieclub.com

15. Hartford York. The world's finest and most extensive collection of hats and accessories for men (and women). Order by Phone: 800-936-5646 or online at www.hartfordyork.com

B. All of the Above Category

CORPORATE

16. ConocoPhillips. ConocoPhillips believes the key to a secure energy future is the efficient use of a variety of energy sources: wind, water, sun, oil, natural gas, coal, nuclear, biomass and more. Energy for tomorrow. www.conocophillips.com

HOME

17. Premier Bathrooms. World's largest supplier of Walk In Bathtubs. Free color brochure. Call now 800-578-2899.

18. Tempur-Pedic, Inc. Call today for your free night-time renewal kit! 888-461-5055.

C. All of the Above Category

REAL ESTATE

19. Fearrington Village, N.C. Full of bluebirds, hollyhocks, belted cows & people of all ages. www.fearrington.com, 800-277-0130.

MISCELLANEOUS

American Cancer Society. Health care is an issue that affects us all. To learn more, visit cancer.org

20. Avanti Savoia. 50 Year Old Balsamic Vinegar. www.avantisavoia.com

David Morgan. Supporting quality craftsmanship since 1962: Northwest Coast Indian and Celtic jewelry, Akubra hats, Filson clothing and luggage, Bosca leather goods, Devold woolens and more. www.davidmorgan.com

21. DeadMenTellNoTales.com. Pirate flags, music, toys, books, jewelry, party goods, posters, clothing, treasure and much more! www.DeadMenTellNoTales.com

22. Houston Museum of Natural Science. One of the nations most attended museums, there's something to delight all ages! 713-639-4629, www.hmns.org

23. John Christian. Designers & Craftsmen of fine personalized jewelry. 3-Day Rush Available. Free catalogue. 888-646-6466, www.ringbox.com

24. Sadigh Gallery. Own a piece of history. Authentic ancient artifacts and coins (Greek, Roman, Egyptian). Free catalog.

25. Warm Things, Inc. Quality down and bedding products at factory direct prices for over 34 years. www.warmthingsonline.com

D. All of the Above Category

HOLIDAY GIFT GUIDE

26. Cabot Creamery. Come visit Cabot Creamery online at www.cabotcheese.coop and find your favorite cheddar... at www.shopcabot.com

27. Casco Bay Wool Works. Fine capes and shawls. 100% Merino, 100% Cashmere. Toll free 888-222-9665. Free Catalog. www.CascoBayWoolWorks.com

28. Davis Instruments. Davis weather stations. Professional Quality at Affordable Prices. Call 800-678-3669 for free catalog or visit www.davisnet.com

29. Laura K. Designs, Inc. Psalm 23 Jewelry Timeless Gifts of Hope, Courage and Love. Gift-Ready Packaged www.Psalm23Jewelry.com 877-256-0023.

30. Let's Gel, Inc. Hard kitchen floors a pain in your back? Gel Pro Mats, stand in comfort. www.letsgel.com

MathTutorDVD.com. Get help with Basic Math, Algebra, Trigonometry, Calculus and Physics. Visit www.MathTutorDVD.com/sm for more information.

31. The California Wine Club. A new winery and a new adventure every month. 800-777-4443 www.cawineclub.com

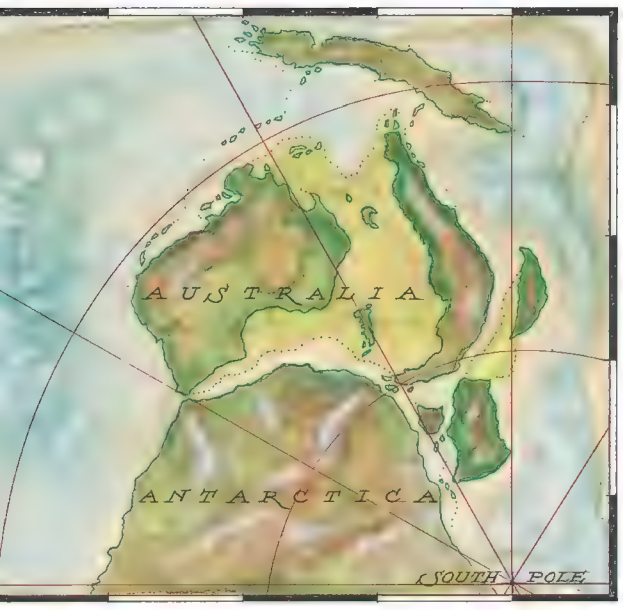
E. All of the Above Category
F. All ADVERTISERS 1-31

Offer Expires February 29, 2008.

The Strange Lives of Polar Di

How did they endure months of perpetual cold and dark?

BY MITCH LESLIE



ON A BALMY SUNDAY MORNING in early March, I'm on a beach in southern Australia looking for ice—or at least traces of it. It's summer in the Southern Hemisphere, and most of the beachgoers sloshing through the rising tide or walking their dogs are wearing T-shirts and shorts. Tom Rich, a paleontologist at Museum Victoria in Melbourne, leads the way along the low, tawny cliffs that crowd the shoreline. Rich is 66, with a stubbly silver beard, sparse gray hair and slanting eyebrows that give his face a sad, world-weary look. He was raised in Southern California and Texas but has spent his professional life in Australia. During more than three decades down under, he's picked up Aussie citizenship and plenty of the country's colorful lingo, but his accent remains stubbornly American. "I sound like I just got off the plane," he says.

This part of the coast, known as Flat Rocks, is near the resort town of Inverloch, about a two-hour drive southeast of Melbourne through farms and woodland parched by more than a decade of drought. Rich stops next to a pile of rubble at the base of a cliff. "That's it," he says. Partly buried by flakes of battleship-gray rock is a telling geological formation. Tongues of dark tan sediment droop into the lighter-colored layer below. The formation is called a "cryoturbation" and was caused when once-frozen clay sank into an underlying layer of sand during a thaw long ago.

Snow and ice are rare in this part of Australia today. But evidence from Flat Rocks and other nearby sites confirms that a little over 100 million years ago, "it was bloody cold around here," as Rich puts it. Though about a third of Australia now lies within the tropics, back then the continent sat about 2,000 miles south of its current position, snuggled against Antarctica. Southeastern Australia probably had a climate similar to that of Chicago, if not Fairbanks.

All the more surprising, then, that dinosaurs thrived here at that time. Think "dinosaurs" and you probably conjure up behemoths trudging through sweltering swamps or torrid tropical forests. But Rich and other scientists working in Australia, Alaska and even atop a mountain in Antarctica have unearthed remains of dinosaurs that prospered in environments that were cold for at least part of the year. Polar dinosaurs, as

nosaurs

Not just warm-weather creatures, dinosaurs (above: hypsilophodonts), in fact, survived icy winters in southeastern Australia 100 million years ago, when the continent was close to the South Pole (opposite: today's land surface is indicated by dotted lines).

they are known, also had to endure prolonged darkness—up to six months each winter. "The moon would be out more than the sun, and it would be tough making a living," says paleontologist David Weishampel of Johns Hopkins University.

The evidence that dinosaurs braved the cold—and maybe scrunched through snow and slid on ice—challenges what scientists know about how the animals survived. Although Rich wasn't the first to unearth polar dinosaurs, he and a few other paleontologists are filling in the picture of how these animals lived and what their environments were like. Recent research might also shed light on two of the most disputed questions in paleontology: Were dinosaurs warmblooded? And what killed them off?

EVERY YEAR from late January to early March, Dinosaur Dreaming—the polar dinosaur project led by Rich—descends on the shore near Inverloch. The sound you hear as you walk up the beach toward the dig is the clinking of hammers on chisels. Kneeling around flat-topped beach boulders that serve as improvised workbenches, a dozen or so volunteers pound on lumps of gray rock. Several wear this year's fashion statement, a T-shirt that reads "Mammalia: Popcorn of the Cretaceous" and shows a bipedal dinosaur clutching two ratlike mammals in one paw and tossing another toward its gaping, toothy mouth.

Polar dinosaur hunters have found fossils on Australia's balmy southern coast (inset: black dots) and the search goes on.

Down in the "hole," a knee-deep gash near the waterline marked off by a circle of fluorescent pink construction netting, another group is using a rock saw and chisels to dislodge blocks the size of loaves of bread. These chunks will also go under the hammer.

At a folding table in the lee of the cliffs, Lesley Kool is triaging the finds brought in by the rock-breakers. Kool started out as a volunteer on Rich's first dino excavation in 1984. She knew little about dinosaurs, but she trained herself to be an expert preparator—the person who winkles fossils out of the rock without smashing them to dust—and developed a knack for identifying fossils. Now she runs the dig. She can tell you that the brownish chunk you hoped was the dinosaur find of the century is really a commonplace bit of fossilized turtle shell.

The crew she supervises includes a smattering of students, a retired literature professor from Tucson, a vacationing manager from an auto parts maker and the owner of an environmental cleanup service who can't stop bursting into song. Most of them come back year after year. They say they return for the camaraderie—and the chance of making a discovery. "It's an addiction for which there is no cure," says Nicole Evered, 68, who has worked on the Flat Rocks dig since it started.

Here the stereotypical image of the fossil hunter sprawled in the dust, unearthing a gigantic dinosaur bone with only a whisk broom and dental picks, doesn't apply. The fossils are too small, too fragmentary and too scattered. In more than 20 years of digging at various places in southern Australia, Rich and his crew have discovered only three articulated specimens, with bones connected as they were in life.

Most of the dinosaur bones they find at Flat Rocks, Kool explains, come from "hypsis" (pronounced HIP-sees), short for hypsilophodonts. These small, darting plant-eaters typically stood about as tall as turkeys. Their distinctive thighbones, which sport a downward-pointing spur, are easy to recognize. But this year's dig has also turned up some rarer finds, such as a thumbnail-size tooth from an as yet unnamed meat-eating dinosaur. One rock yielded a long, black fang that looks like an obsidian toothpick and may have come from a pterosaur, a type of flying reptile. And just two months ago, Rich's colleague Anthony Martin of Emory University in Atlanta announced that patterns in a 115-million-year-old layer of mud at Flat Rocks are dinosaur tracks. The 14-inch-long, three-toed footprints came from a type of meat-eating dinosaur called a theropod. Judging from the size and spacing of the prints, it must

MAP: MIKE REAGAN; MITCHELL LESLIE; P. 68 MAP: MIKE REAGAN; PP. 68-69 ILLUSTRATION (DETAIL): PETER TRUSLER

Even though he insists Australia is a "crappy country for dinosaur fossils," American expatriate Tom Rich (with specimens at Museum Victoria) has pioneered the study of polar dinosaurs—and named two species he discovered after a son and daughter.

have stood about 12 feet high, making it the largest carnivorous dinosaur known to have lived there.

Promising fossils get wrapped in toilet tissue and newspaper for protection. Back at the museum, preparators will remove the encasing rock with tools that range from tungsten carbide needles to miniature, hand-held jackhammers powered by compressed air. Even unpromising chunks of rock will be pounded down to nuggets the size of sugar cubes; the team will check the bits for mammal jaws that are so small they could fit on a postage stamp.

IT WAS THE PROSPECT of finding ancient mammal bones—not dinosaurs—that drew Rich to Australia. He was never a dinomaniac, not even as a child. What hooked his imagination, though, were the early mammals that scurried around at the same time as the dinosaurs. One illustration in a book he read as a boy portrayed the animals as snacking triumphantly on dinosaur eggs. Rich went with the evolutionary winners and studied fossil hedgehogs for his doctorate at Columbia University.

He landed in Australia in the early 1970s with no job and no intention of looking for one. His wife, Patricia Vickers-Rich, also a paleontologist, was in the country to follow up on her PhD research on fossil birds. But while thumbing through a newspaper "to get an idea what this country was about" he saw a help wanted ad for a curator at the local museum. He got the job and works there to this day. Rich and his wife—now a professor at Monash University in Melbourne and chief collaborator on the dinosaur research—stayed here because, he says, "the country was wide open" for studying the early evolution of mammals and birds.

In 1982, Rich met some museum volunteers eager to get their hands dirty at a dinosaur dig, but he initially resisted their pleas. He knew of a site 180 miles west of Flat Rocks that he had dubbed Dinosaur Cove after finding a few unidentifiable bone fragments there years earlier. Excavating there would require tunneling into cliffs—a dangerous proposition—with no guarantee of finding anything. But in 1984 he finally gave in, and within weeks the team found several dinosaur bones and a tooth.

For ten years Rich and a mostly amateur crew blasted, bored, picked and chiseled into the steep hillside. They dug two tunnels, each more than 60 feet long, and moved more than 600 tons of rock, much of it by hand. Rich says that "you wouldn't have to work that hard in Montana," which is famous for its dinosaur deposits and where the tectonic movements that hoisted the Rockies exposed bone-harboring rock strata. In contrast, Rich calls Australia, where dinosaur sediments are mostly buried deep, a "crappy country for dinosaur fossils."

MITCH LESLIE *was a dinosaur fanatic as a child and studied reptiles before becoming a writer. He lives in Portland, Oregon.*

PAUL NEVIN

By weight, the haul from the decade-long Dinosaur Cove dig was relatively small, about 100 pounds of fossils, and only traces of the mammals Rich covets—an arm bone and a shard of tooth. But the finds supplied clues about polar dinosaurs' metabolism and their strategies for weathering the long winters. They even provided a rare glimpse of the creatures' brains. Poring over the skeletons made Rich one of the world's experts on polar dinos.

AT THE TIME DINOSAURS AROSE, around 220 million years ago, the earth's continents were fused into a single supercontinent we now call Pangea. It began breaking up around 200 million years ago, and Australia and Antarctica, which were still stuck together, stayed near the South Pole. When the fossilized creatures Rich studies were scurrying around, about 100 million years ago, southern Australia sat close to the bottom of the planet, and was just starting to pull away from Antarctica. (Australia's current position reflects that it has been inching northward "at the rate your fingernails grow," Rich says.)

Dinosaurs called *Edmontosaurus*, which could grow up to 35 feet long and may have lived in herds (above), once roamed Alaska. Did they migrate south in fall to avoid frigid winters?

During the animals' heyday in the early Cretaceous period, the sun didn't rise in southern Australia for one and a half to four and a half months every year. At the North and South poles, the gloom lasted for six months. Plant growth in these areas would have periodically slowed or stopped, potentially creating a food crisis for any dinosaurs that lived there.

In more than 20 years of digging, Rich and his colleagues have found the remains of at least 15 species. For example, the knee-high hypsi *Leaellynasaura amicagraphica* (named for Rich's daughter, Leaellyn) once dodged predators at what is now Dinosaur Cove. Rich's son, Tim, got his name attached to another Dinosaur Cove denizen, the six-foot-tall *Timimus hermani*, which probably looked and ran like an ostrich.

Dinosaurs also thrived farther south. Antarctica hasn't moved much in the past 100 million years, stalling over the South Pole. Today, well-insulated animals and stubbly plants can survive the continent's brutal cold, at least close to the coast. But fossilized leaves and other plant remains suggest that during the dinosaurs' day Antarctica had a temperate climate. Judd Case of Eastern Washington University in Cheney says that Antarctic dinosaurs from the late Cretaceous period around 70 million years ago resembled those that lived in other parts of the world some 60 million years earlier. Case says this suggests that some kinds of dinosaurs hung on in Antarctica long after they had died out elsewhere. Perhaps Antarctica was an oasis for them as flowering plants spread across the rest of the world and outcompeted the pine tree relatives that warmer-climed dinosaurs ate.

William Hammer of Augustana College in Rock Island, Illinois, digs at an elevation of 13,000 feet on the slope of Mount Kirkpatrick, about 400 miles from the South Pole. He has pried out the bones of *Cryolophosaurus ellioti*, a 22-foot-long meat-eater with a bony crest curving up from its forehead like a cowlick. He has also found fossil evidence of a prosauropod, an ancestor of enormous dinosaurs such as *Brachiosaurus* and *Apatosaurus*.

At the opposite end of the globe, on Alaska's North Slope, Anthony Fiorillo, a paleontologist from the Museum of Nature and Science in Dallas, has been exhuming bones from dinosaur graveyards along the Colville River. Although northern Alaska wasn't as cold 70 million years ago as it is today, winters would still have brought snow and ice. Back then, sharp-toothed relatives of *Tyrannosaurus rex* stalked the 35-foot-long, duck-billed dinosaur *Edmontosaurus*. The surprise from these finds, Fiorillo says, is that

ILLUSTRATION (DETAIL): TOM STEWART / ALASKA MUSEUM OF NATURAL HISTORY

the same types of dinosaurs lived in Alaska as in toastier environments farther south, such as Montana and even Texas. So far, he hasn't unearthed any dinosaurs that appear to have lived only in frosty climes.

Dinosaurs had two choices when winter arrived—tough it out or try to escape. The question of how dinosaurs survived the polar cold has gotten entangled with the broader question of whether the ancient beasts were warmblooded (endothermic), like modern birds and mammals, or coldblooded (ectothermic), like modern reptiles. (See sidebar, p. 75.) In a cold environment, endotherms keep their bodies warm enough for muscles to flex and nerves to fire by generating heat through their metabolism. Ectotherms, by contrast, warm their bodies by absorbing heat from their surroundings—think of a lizard basking on a rock. Endothermy isn't necessarily better, notes David Fastovsky of the University of Rhode Island. Endotherms have the edge in stamina, but ectotherms need much less food.

THE PRIZE DISCOVERY from Rich's Dinosaur Cove excavation suggests that *Leaellynasaura* stayed active during the long polar winters. A two-inch-long *Leaellynasaura* skull the color of milk chocolate is the closest to a complete dinosaur skull the team has found. The base remains partly embedded in a disk of gray rock scored by numerous grooves where Kool meticulously exposed the fossil with a fine needle. Enough of the bone is visible for Rich to analyze the size of the eye sockets. Hypsis generally had big eyes, but *Leaellynasaura*'s are disproportionately large—perhaps so they could capture more light during the protracted murk of polar winters. Moreover, the back of the same skull has broken off to expose a mold of the brain, known as an endocast. Rich found that the dinosaur had bulging optic lobes, parts of the brain that process visual information. *Leaellynasaura*'s optic lobes are larger than those from hypsis that lived in non-polar environments, suggesting that it had extra brainpower to analyze input from its big eyes.

Similarly, Fiorillo and Roland Gangloff, a retired paleontologist from the University of Alaska, have found that the small meat-eater *Troodon* was much more common on the North Slope of Alaska than farther south. *Troodon* might have gained an advantage over the other carnivorous dinosaurs in the north because it also had large eyes and a hefty brain, perhaps useful for hunting all winter long.

Other dinosaurs might have migrated south for the winter (or north, if they lived in the Southern Hemisphere). Rich says his dinosaurs would have made unlikely travelers. They were small, and an inland sea would have blocked their path to warmer climes. But *Edmontosaurus*, from Alaska's North Slope, is a better candidate for seasonal migration. Adults were about the size of elephants, so they would not have been able to crawl under rocks when temperatures fell. Rough calculations suggest that by ambling at about 1 mile per hour—"browsing speed" for animals of that size—herds of *Edmontosaurus* could have journeyed more than 1,000 miles south in three months, says paleobotanist Bob Spicer of the Open University in Milton Keynes, Britain. Such a migration would have taken them out of the "zone of darkness" and into areas where plants might have still been growing.

For his part, Fiorillo doubts it. He and Gangloff contend that juvenile *Edmontosaurus* grew too slowly to have tramped long distances. They couldn't have kept up with a herd, so the animals must have stayed put, regardless of temperatures. This kind of back-and-forth might be dizzying, but it's how science moves ahead, especially in paleontology, where researchers have to draw conclusions from small numbers of often-fragmentary fossils.

Leaellynasaura **(right) had large eye sockets (circled, on a two-inch fossil skull), hinting the dinosaur's vision had adapted to the polar winter.**

THE DINOSAURS had an impressive run. They settled every continent, grew bigger than any other land animals and lasted for more than 150 million years. And then they vanished. Their demise has spawned more than a little speculation about its cause. Scenarios range from disease or competition with mammals to the flyby of an as-yet-undetected companion to the sun, a kind of death star.

Most paleontologists have accepted another extraterrestrial killer, an asteroid more than six miles wide that socked Earth 65 million years ago. It gouged a crater more than 100 miles wide on what is now the Yucatán Peninsula in Mexico. According to the leading scenario, the impact threw huge amounts of dust and other debris into the atmosphere, blocking sunlight and sinking the Earth into darkness for weeks or even months. A global disaster certainly struck at the time, according to overwhelming fossil and geological evidence. As Fastovsky and Weishampel write in *The Evolution and Extinction of the Dinosaurs*, "the world's oceans were virtually 'dead'" as pho-

STEVE MORTON; ILLUSTRATION (DETAIL): PETER TRUSLER

Read about Antarctic dino hunter William Hammer at Smithsonian.com/hammer

Taking a Dinosaur's Temperature

Polar species heat up one of paleontology's great debates

Coldblooded or warmblooded? Paleontologists have tussled for more than 100 years over which camp dinosaurs belong in. The balance of evidence swings back and forth. "This is Friday, so I'll be on the side of endothermy [warmbloodedness]," says paleontologist David Weishampel of Johns Hopkins University. "But if you ask me on Tuesday, I won't be."

According to David Fastovsky of the University of Rhode Island, polar dinosaurs support the idea that dinosaur metabolism differed from that of modern reptiles. You just don't see reptiles in frigid climates today, he observes. Terrestrial reptiles reach massive dinosaur scale—the 25-foot anacondas and 20-foot crocs—only in the tropics. Alaska has, at most, garter snakes.

The evidence does favor warmbloodedness for some dinosaurs, says Museum Victoria's Tom Rich, who contributed to the debate by sawing pieces off two precious Australian specimens and sending them to the South African Museum in Cape Town. There, Anusuya Chinsamy-Turan scrutinized the *Timimus* and *Leaellynasaura* samples for lines of arrested growth, or LAGs, dark streaks visible when you look at a bone's cross-section under the microscope. Like tree rings, LAGs indicate that growth ceased temporarily. Modern reptiles that dwell in seasonal environments show LAGS, as do mammals that hibernate, but birds and other mammals typically don't.

Was speedy *Timimus* a coldblooded hibernator?

Chinsamy-Turan found that *Timimus* had LAGS but *Leaellynasaura* didn't. Their absence doesn't prove that *Leaellynasaura* was warmblooded, and their presence in *Timimus* doesn't mark it as definitely coldblooded. But the disparity between the species indicates that they coped with cold in different ways, Rich notes. *Timimus* probably hibernated away the dark, chilly months, perhaps by taking refuge beneath vegetation or even underground—a strategy used by many coldblooded animals. (In Montana, paleontologists recently discovered the fossils of burrowing dinosaurs that perished in tunnels, giving credence to the hibernation notion.) In contrast, Rich speculates, *Leaellynasaura* remained active all winter, even if snow fell and ice sealed rivers and creeks; the animals could nibble leaves of the evergreens that predominated in the region, and they might have kept warm with a layer of fat.

There might be a happy medium, after all. Metabolically speaking, the animals might have fallen between today's lizards and mammals, says Fastovsky. If dinos weren't like today's ectotherms or endotherms, he says, that would explain why researchers have had such a hard time fitting them into either category. *—M.L.*

tosynthesis by plankton ceased and marine food webs unraveled. The dinosaurs died, while the ancestors of today's mammals, birds and reptiles hung on.

Paleontologists disagree about what the existence of polar dinosaurs says about the asteroid-winter scenario. Fiorillo says he is skeptical of it because "dinosaurs in Alaska were doing just fine in conditions just like that." He argues that climate changes caused by shifts in circulation of the atmosphere and oceans probably did in the dinosaurs.

But Rich says that the lives of polar dinosaurs can help researchers understand why dinosaurs went extinct after the impact. The catastrophe had to have been long and severe enough to kill off the dark- and cold-adapted animals. "You can't just have it [darkness] for a month and do the job," he says.

But Fastovsky says that polar dinosaurs tell us nothing about the animals' demise because we don't know whether these particular species were even alive at the end of the Cretaceous period. Rich's Australian dinosaurs were long extinct by the time the asteroid hit. Whether the dinosaurs on the North Slope of Alaska were alive is uncertain, he says; researchers have found no fossil layers there from the very end of the Cretaceous period.

For polar dinosaurs to provide more definitive evidence on dinosaur metabolism and extinction, we'll need more fossils. This year Rich embarked on a dig on Alaska's North Slope, his first. It's expensive work, and it took him 18 years to line up the funding necessary to transport, on a single-engine Otter plane and snow machines, his field party and their equipment, which included rock drills, chainsaws, jackhammers and explosives.

Rich and his advance team prepared the site on the Colville River, about 375 miles north of Fairbanks, in late March and early April, when the temperatures sink to minus 40 degrees Fahrenheit. They hired a miner to drive a horizontal shaft into the riverbank just above a layer of dinosaur fossils. Working at that time of year sounds crazy, Rich admits, but it's actually easier to dig a tunnel when the ground is frozen solid.

In August, the full ten-member team walked into the tunnel and extracted fossils from the floor. They are still sorting the bones, but Rich has already identified one notable find: a type of pachycephalosaur, a plant-eating dinosaur with an unusually thick skull that has been found only once before, also in Alaska. It might be the first known dinosaur that lived exclusively in the Far North, more evidence that the ancient beasts endured even the coldest and darkest days.

ILLUSTRATION (DETAIL): PETER TRUSLER / AUSTRALIAN POSTAL CORPORATION

Advertisement

www.Stauer.com

"As a professional restorer of antique and classic watches for major museums, I recently reviewed the movement and individual parts of the Stauer Noire watch. The assembly and the precision of the mechanical movement are excellent."

—George Thomas
Towson Watch Company

I'll take mine black...no sugar

In the early 1930's watch manufacturers took a clue from Henry Ford's favorite quote concerning his automobiles, "You can have any color as long as it is black." Black dialed watches became the rage especially with pilots and race drivers. Of course, since the black dial went well with a black tuxedo, the adventurer's black dial watch easily moved from the airplane hangar to dancing at the nightclub. Now, Stauer brings back the "Noire", a design based on an elegant timepiece built in 1936. Black dialed, complex automatics from the 1930's have recently hit new heights at auction. One was sold for in excess of $600,000. We thought that you might like to have an affordable version that will be much more accurate than the original.

The 27 jewels and hand-assembled parts inside drive this classic masterpiece.

Basic black with a twist. Not only are the dial, hands and face vintage, but we used a 27-jeweled automatic movement. This is the kind of engineering desired by fine watch collectors worldwide. But since we design this classic movement on state of the art computer-controlled Swiss built machines, the accuracy is excellent. Three interior dials display day, month and date. And, we have priced the luxurious Stauer Noire at a price to keep you in the black... only 3 payments of $33. So slip into the back of your black limousine, savor some rich tasting black coffee and look at your wrist knowing that you have some great times on your hands.

An offer that will make you dig out your old tux. The movement of the Stauer Noire wrist watch carries an extended two year warranty. But first enjoy this handsome timepiece risk-free for 30 days for the extraordinary price of only 3 payments of $33. If you are not thrilled with the quality and rare design, simply send it back for a full refund of the purchase price.

Exclusive Offer—Not Available in Stores

Call now to take advantage of this limited offer.

Stauer Noire Watch—$99 + S&H or

3 credit card payments of $33 + S&H

800-952-4473

Promotional Code NWT245-04
Please mention this code when you call.

To order by mail, please call for details.

Authentic Stauer Historical Reproductions

Stauer
HERITAGE OF ART & SCIENCE

14101 Southcross Drive W., Dept. NWT245-04
Burnsville, Minnesota 55337

REVOLUTIONARY REAL ESTATE

STATESMEN, SOLDIERS AND SPIES WHO MADE AMERICA —AND THE WAY THEY LIVED

BY HUGH HOWARD · PHOTOGRAPHS BY ROGER STRAUS III

AMERICA'S FOUNDING FATHERS shaped one of history's most dramatic stories, transforming 13 obscure colonies into an emerging nation whose political principles would change the world. But to see them in the household settings they shared with wives and families and in the intimate context of their very different era, is to understand the founders as individuals, extraordinary ones, to be sure, but also men who supped and shaved, wore slippers and read by candlelight. It was also an extraordinary time, but a time of achingly slow communications and travel, primitive and perverse medical care, a moral code that had only begun to condemn slavery, and ways of living that seem today an odd mixture of the charming, the crude and the peculiar.

The founders shared a remarkably small and interconnected world, one that extended to their personal as well as their public lives. When New Jersey delegate William Livingston rode to Philadelphia for the first Continental Congress, for instance, he traveled with his new son-in-law, John Jay, who would be the first chief justice of the United States Supreme Court. The president of that Congress was Peyton Randolph, a cousin of Thomas Jefferson and mentor of George Washington; another Virginia delegate, George Wythe, had been Jefferson's "faithful Mentor in youth." John Adams and Jefferson first met at the second Philadelphia Congress in 1775; half a century later, after both had lived long and colorful lives, they were still writing to each other.

Of course the name that seems to connect them all is Washington, the era's essential figure. His adjutants included painter (and sometime colonel) John Trumbull; the Mar-

Drayton Hall, a stately Palladian manse built in 1742 near Charleston, South Carolina, was the childhood home of pamphleteer and Continental Congress delegate William Henry Drayton. Its porticoes and pediments convey a sense of grandeur, and it remains in much the same condition as it was 250 years ago.

quis de Lafayette, whom he regarded almost as an adopted son; future president James Monroe; and his chief of staff, the precociously brilliant Alexander Hamilton. Among his generals were Philip Schuyler of New York and Henry Knox of Massachusetts. Years later, Washington's first cabinet would include Secretary of War Knox, Secretary of the Treasury Hamilton (by then married to Philip Schuyler's daughter Betsy), Secretary of State Jefferson and Attorney General Edmund Randolph, another Jefferson cousin. Washington appointed Jay to the highest court, and John Adams served as his vice president. It was a world characterized by enduring ties of blood, marriage and political kinship. And imposing, classic architecture.

These pages showcase a variety of historic 18th-century houses. (Neither Washington's Mount Vernon nor Jefferson's Monticello, the best known and most visited of the founder's houses, are included in this excerpt, though they are part of the new book from which it comes, *Houses of the Founding Fathers*; each deserves an article of its own.) Some were occupied by such important personages as John and Abigail Adams. Others memorialize lesser-known figures, such as America's first spy, Silas Deane of Connecticut, and pamphleteer and delegate to the Continental Congress William Henry Drayton (inset). All the houses are open to the public.

Excerpted from *Houses of the Founding Fathers* by Hugh Howard, with original photography by Roger Straus III. Copyright © 2007. Published by Artisan, New York. All rights reserved.

Life in the 18th Century

- the average child had a roughly 50 percent chance of surviving to adulthood
- slavery was legal in all 13 colonies
- all cooking was done in or around the fireplace
- women could not vote, hold public office and, unless widowed, own property in most colonies
- travel was slow and uncertain: by water, ships relied upon the wind for locomotion; by land, a rider on horseback might hope to cover 30 miles in a day, a passenger in a coach, just 20
- aside from sunlight, the sole source of heat was fire, usually in an open fireplace; after sunset, illumination was either by moonlight or candlelight
- there was no indoor plumbing: the flush toilet, the bathroom and the kitchen faucet are 19th-century innovations—chamber pots, outhouses and buckets were a way of life
- privacy was a rare privilege for most: people, including children at home and strangers at inns, routinely shared beds
- aside from a minority of city dwellers, almost everybody was a farmer
- there was no anesthesia for surgery or childbirth
- every household produced some, and in many cases all, of the candles, soap, foodstuffs and clothing it required
- the medieval notion of the four humors still dominated medical theory, so bloodletting and purging were employed to restore the balance of black and yellow bile, blood and phlegm, and thus, presumably, good health

Drayton Hall

CHARLESTON, SOUTH CAROLINA

As a delegate to the Continental Congress, William Henry Drayton of South Carolina took part in a number of acrimonious debates over such important issues as military pensions, British proposals for peace and the Articles of Confederation. Drayton was also outspoken about a suitable way to mark the third anniversary of the Declaration of Independence. Thanks to his advocacy, "a very elegant dinner" followed by a "brilliant exhibition" of fireworks won out—the origin of our Fourth of July celebrations.

Once the center of a busy 660-acre plantation—with stables, slave quarters, a poultry house, lime kiln and privy—Drayton's childhood home now stands alone. But it remains the house he knew, largely untouched and authentic—and all the grander for it.

William Drayton never became master of Drayton Hall. His father disinherited him when William stayed in Philadelphia to serve in the Continental Congress rather than coming home to defend South Carolina when British troops invaded in 1779.

The nearly 8,000-square-foot brick-and-sandstone Drayton Hall was one of the largest homes in the area. The light-filled withdrawing room (above) still boasts its original split-pediment overmantel, ornate 1742 plasterwork ceiling and bald cypress paneling. The mahogany staircase (left) was finished in a vermilion stain. In the cavernous basement (below), dismantled limestone columns thought to have once supported the portico's upper level sit near a huge fireplace; why they were replaced is a mystery.

The Deshler-Morris House

GERMANTOWN, PENNSYLVANIA

"We are all well at present, but the city is very sickly and numbers [are] dying daily," President George Washington wrote on August 25, 1793. As he put it, a "malignant fever" (actually yellow fever) was racing through Philadelphia, the young nation's capital. A reluctant Washington sought refuge at his Mount Vernon plantation in Virginia, but by the end of October reports from Philadelphia suggested that new cases of the fever were diminishing. In November, the president returned to Pennsylvania, establishing a temporary seat for the executive branch in the village of Germantown, six miles north of the capital. He rented a house from Isaac Franks, a former colonel in the Continental Army who had bought the home after the original owner, David Deshler, died. By December 1, Washington was back in Philadelphia, but he returned to the house—the earliest surviving presidential residence—the following summer.

In November 1793, President George Washington took up residence in a Georgian-style home (top, left) in the village of Germantown, outside the capital city of Philadelphia, to escape the epidemic of yellow fever ravaging the city. Washington ran the executive branch of the government from the house, built by Quaker merchant David Deshler in 1772 and later owned for many years by Samuel B. Morris and his descendants. Washington's cabinet, including Thomas Jefferson (secretary of state), Henry Knox (war) and Alexander Hamilton (treasury), met in the house's parlor (above). The room's red camelback sofa is thought to have been used by George and Martha during his presidency. George would have been seated for the main, midafternoon meal in the dining room (left); and George and Martha both "slept here," in the second-floor bedroom (below). Germantown was also the place where, in 1796, artist Gilbert Stuart would record his famous likeness of Washington (inset).

The Silas Deane and Joseph Webb Houses

WETHERSFIELD, CONNECTICUT

The two houses sit side by side in the port town of Wethersfield, overlooking a bend in the Connecticut River. Their tranquil setting belies an intriguing past. Educated at Yale, Silas Deane (above) opened a law office in Wethersfield in 1762. He served in the Continental Congress in 1774 and 1775, and was appointed by Benjamin Franklin and Congress' Committee on Secret Correspondence to travel to France in 1776 "to transact such Business, commercial and political, as we have committed to his care." He was to pose as a merchant, but covertly solicit money and military assistance from

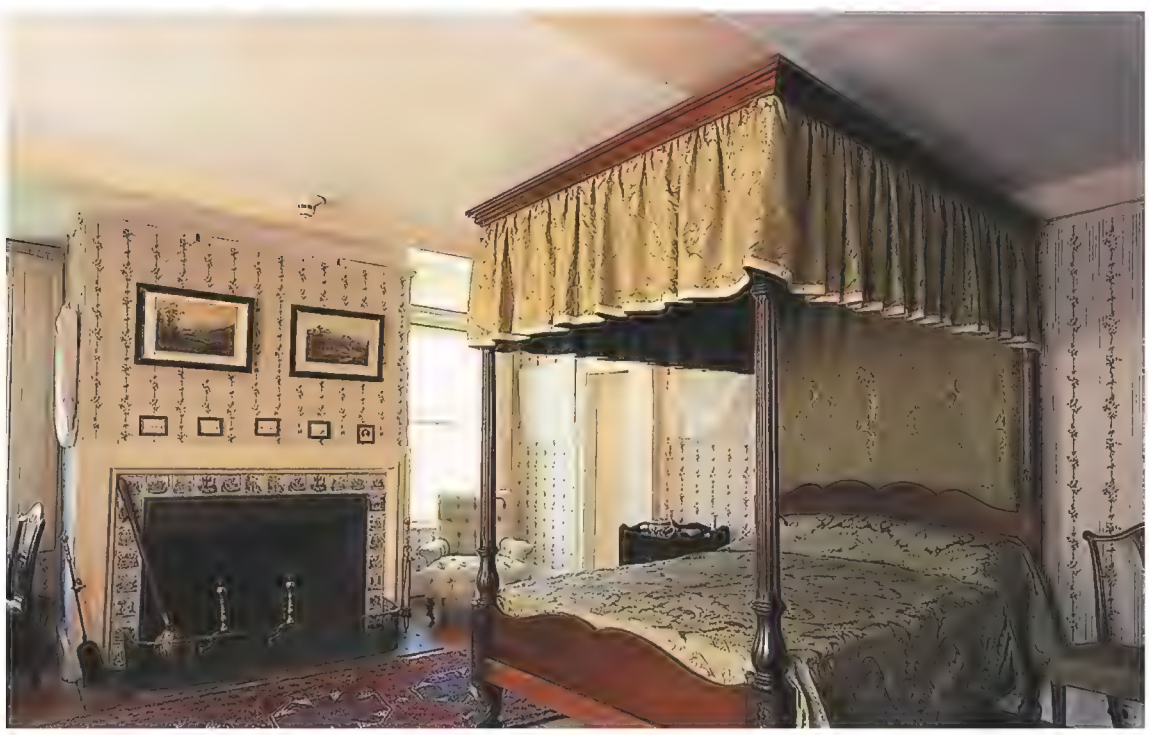
The asymmetrical facade of the 1770 Silas Deane house (top) was unusual for its time. The house's kitchen (above) boasts a large fireplace, bake oven and stone sink. The parlor (below) features a carved brownstone mantel and portraits of Deane and his second wife, Elizabeth Saltonstall, granddaughter of a former governor.

ROGER STRAUS III (SILAS DEANE PORTRAIT DETAIL); P. 92 NATIONAL PORTRAIT GALLERY, SI / ART RESOURCE, NY (GEORGE WASHINGTON PORTRAIT DETAIL)

France. Deane arranged for the export of eight shiploads of military supplies to America and commissioned the Marquis de Lafayette a major general. But Deane was later accused, falsely it seems, of misusing funds and spent a decade in exile in Europe. He died mysteriously in 1789 on board a ship headed home.

The house next door to "Brother Deane's" also had Revolutionary connections. Samuel B. Webb, son of its builder, fought at the battles of Bunker Hill and Trenton and became an aide-de-camp to General Washington, who by happenstance would spend time at the Webb House in the spring of 1781, meeting with French military officers to plan the final phase of the Revolutionary War.

The Webb House (left), built in 1752, has a gambrel roof and Georgian floor plan. The paneled wall in the home's parlor (above) features a colorful shell cupboard, intended both to store and display the china and other goods the merchant family owned. The red wool flock wallpaper with a leafy rococo print in the bedchamber (below) that Washington slept in when he stayed there in 1781 is original. Judging from the Webb family account books, it was hung in anticipation of the general's arrival.



In 1800, the Adamses enlarged "Old House"—originally built for a wealthy sugar planter in 1731—nearly doubling its size (above, top). An elderly, almost sightless Adams spent his last years in the home's upstairs study (above, center). He had purchased the Louis XVI secretary, at rear far-right corner, in France in 1783, and while seated at it, resumed his memorable correspondence with Jefferson in 1812. He also brought back 12 Louis XV armchairs, now in the house's Long Room (opposite). Adams slept in the bedchamber (above), as did Abigail, until her death in 1818 of typhoid fever. Adams died eight years later—on July 4.

John Adams' "Old House"

QUINCY, MASSACHUSETTS

John and Abigail Adams bought the home they would call "Old House" in September 1787 while still in England, where John was serving as minister to the Court of Saint James's. When they moved into the house the following spring, they found it confining. To Abigail it resembled a "wren's nest" with all the comfort of a "barracks." The couple added a kitchen ell and inserted two windows to overlook the garden, but just as they settled in, John was elected vice president. He served eight years (1789-1797) in that office and four more as president (1797-1801). Before returning to Massachusetts, the Adamses enlarged Old House, almost doubling its size.

Adams (above, in a copy of a Gilbert Stuart portrait done by Stuart's daughter Jane) died at age 90, on July 4, 1826—within hours of Thomas Jefferson and 50 years to the day after signing the Declaration of Independence—confident that the experiment the founding fathers had launched would succeed.

SMITHSONIAN AMERICAN ART MUSEUM / ART RESOURCE, NY (JOHN ADAMS PORTRAIT DETAIL)

Learn about other Founding Fathers' homes at Smithsonian.com/fathers

Mar ETHNIC

Europe's most diverse city stayed calm when riots rocked France two years ago. Now, as the old port sheds its seedy image, some view it as a laboratory of the continent's future

BY ANDREW PURVIS
PHOTOGRAPHS BY KATE BROOKS

CHRISTOPHE ENA / AP IMAGES

ONE MORNING in early November 2005, Kader Tighilt turned on the radio as he drove to work. The news reported that 14 cars had burned overnight in Marseille's northern suburbs. "They've done it," Tighilt said out loud. "The bastards!" It seemed his worst fears had been confirmed: riots, which had first broken out in the suburbs of Paris on October 27, had now spread to the port city and one of the largest immigrant communities in France. For the previous two weeks, Tighilt, his fellow social workers and community volunteers had been working feverishly to prevent this very thing from happening, fanning out across the city to places where young people gathered to spread the word that violence was folly.

"We were worried that [our youths] would try to compete with Paris," says Tighilt, 45, who grew up in an Algerian family in a shantytown on the outskirts of the city. He was not alone. Marseille is not only arguably Europe's most ethnically diverse city, but also has as high a proportion of Muslims as any place in Western Europe. It suffers from high unemployment and the usual brew of urban problems. "We were waiting for the place to explode," one city official confided later.

But it didn't. Tighilt called a friend on the police force that morning, only to discover that the radio report had been exaggerated: yes, 14 cars had burned, but not in the Marseille suburbs alone—in the entire department, an area with a population of nearly two million people. By Paris' standards, the incident was trifling. And that was about it. For three weeks, riot police would fight running battles in the French capital, in Lyon, Strasbourg and elsewhere; dozens of shops, schools and businesses would be ransacked, thousands of cars torched and 3,000 rioters arrested. Yet Marseille, with a population of slightly more than 800,000, remained relatively quiet.

Despite being home to sizable Jewish and Muslim populations, Marseille had largely avoided the worst of the anti-Semitic attacks that swept France in 2002 and 2003 in the wake of the second intifada (Palestinian uprising) in Israel. And the 2006 Israeli incursion against Hezbollah in Lebanon produced anti-Israeli demonstrations in the city but no violence. At a time when disputes over the role of Islam in Western society are dividing Europe, Marseille has recently approved construction of a huge new mosque on a hill overlooking the harbor, setting aside a $2.6 million plot of city-owned land for the project. "If France is a very racist country," says Susanne Stemmler, a French studies expert at the Center for Metropolitan Studies in Berlin who has focused on youth culture in the port city, "Marseille is its liberated zone."

It seems an unlikely model. The city has not historically enjoyed a reputation for serenity. For Americans, at least, it may best be remembered as a setting for *The French Connec-*

seille's BOUILLABAISSE

Why was the port city spared France's immigrant youth uprisings of 2005 (riots in Paris, opposite)? "If France," says scholar Susanne Stemmler, "is a very racist country, Marseille is its liberated zone."

tion, the 1971 drug smuggling thriller starring Gene Hackman. French television series depict the city as a seedy, rebellious enclave lacking in proper Gallic restraint. Yet its calm in the midst of a crisis has caused sociologists and politicians to take a fresh look. Across Europe, immigrant populations are mushrooming. There were fewer than one million Muslims in Western Europe after World War II before guest-worker programs fueled immigration. Today there are 15 million Muslims, five million in France alone. That change has exacerbated tensions between communities and local governments struggling to cope with the newcomers. Could Marseille, gritty yet forward-thinking, and as the French say, *convivial,* hold a key to Europe's future?

These questions come at a time when Marseille's image is already undergoing an upgrade. The world of drug lords and crumbling wharves has been giving way, block by block, to tourists and trendy boutiques. The French government has pledged more than half a billion dollars to redevelop the waterfront. Cruise ships brought 460,000 visitors this year, up from 19,000 a decade ago. Hotel capacity is expected to increase 50 percent in the next four years. Once merely the jumping-off point for tourists heading into Provence, the old port city is fast becoming a destination in itself. "Marseille is no longer the city of *The French Connection*," Thomas Verdon, the city's director of tourism, assured me. "It's a melting pot of civilizations."

Fifty years ago, from Alexandria to Beirut to Algeria's Oran, multicultural cities were the norm on the Mediterranean. Today, according to French sociologist Jean Viard, Marseille is the only one remaining. As such, he says, it represents a kind of "laboratory for an increasingly heterogeneous Europe." It is, he adds, "a city of the past—and of the future."

WHEN I VISITED MARSEILLE, in the waning days of a Provençal summer, a three-masted "tall ship" from a Colombian naval academy was moored in the inner harbor, sporting a display of flags from around the world and blasting samba music. At first glance, Marseille, with its jumble of white and brown buildings crowded around a narrow harbor, seems to resemble other port towns along France's Mediterranean coast. But less than half a mile from the historic center of the city lies the hectic, crowded quarter of Noailles, where immigrants from Morocco or Algeria, Senegal or the Indian Ocean's Comoro Islands haggle over halal (the Muslim version of kosher) meats as well as pastries and used clothing. Impromptu flea markets blanket sidewalks and back alleys. Just off the rue des Dominicaines, one of the city's older avenues, across from a shuttered 17th-century church, Muslim men kneel toward Mecca in a vacant shop lit by a single fluorescent bulb.

That night, the Colombian cadets were throwing a

Writer **ANDREW PURVIS,** *the bureau chief for* Time *in Berlin, has reported extensively on European and African immigration issues. Photographer* **KATE BROOKS** *is based in Beirut, Lebanon.*

"We have a choice," says Kader Tighilt. Either "we surrender these places to the law of the jungle," or "we take it upon ourselves to become masters of our own neighborhoods" (a produce market, above, and street vendors, inset, in Les Puces, a popular shopping area frequented by Marseillais of diverse ethnic and racial backgrounds).

Sociologist Jean Viard calls Marseille (in 1890, inset, and today, above) "a city of the past—and of the future" as well as a "laboratory for an increasingly heterogeneous Europe."

party. Thousands of Marseillais from the Arab world, as well as Armenians, Senegalese, Comorans and native French, descended on the Vieux Port to saunter along the waterfront or stop for a pastis (anise-flavored aperitif) at a local café. Some danced on the ship's deck. A shipboard band, not far from my hotel, played on until early morning. Then, as the first Vespas began roaring around the port-side boulevard at dawn, a lone trumpeter outside my window played "La Marseillaise." The national anthem, composed during the French Revolution, took its name from the city because it was popularized by local militias who sang the call to arms as they marched on Paris.

Of the city's 800,000 souls, some 200,000 are Muslim; 80,000 are Armenian Orthodox. There are nearly 80,000 Jews, the third-largest population in Europe, as well as 3,000 Buddhists. Marseille is home to more Comorans (70,000) than any other city but Moroni, the capital of the East African island nation. Marseille has 68 Muslim prayer rooms, 41 synagogues and 29 Jewish schools, as well as an assortment of Buddhist temples.

"What makes Marseille different," said Clément Yana, an oral surgeon who is a leader of the city's Jewish community, "is the will not to be provoked, for example, by the intifada in Israel—not to let the situation get out of control. We could either panic, and say 'Look, there is anti-Semitism!' or we could get out in the communities and work." Several years ago, he said, when a synagogue on the outskirts of Marseille was burned to the ground, Jewish parents ordered their kids to stay home and canceled a series of soccer matches scheduled in Arab neighborhoods. Kader Tighilt (who is Muslim and heads a mentoring association, Future Generations) immediately telephoned Yana. Virtually overnight, the two men organized a tournament that would include both Muslim and Jewish players. They initially called the games, now an annual affair, the "tournament of peace and brotherhood."

A spirit of cooperation, therefore, was already well established at the moment in 2005 when community leaders feared that Arab neighborhoods were about to erupt. Volunteers and staffers from a variety of organizations, including Future Generations, fanned out across Marseille and its northern suburbs attempting to put into context the then nonstop TV

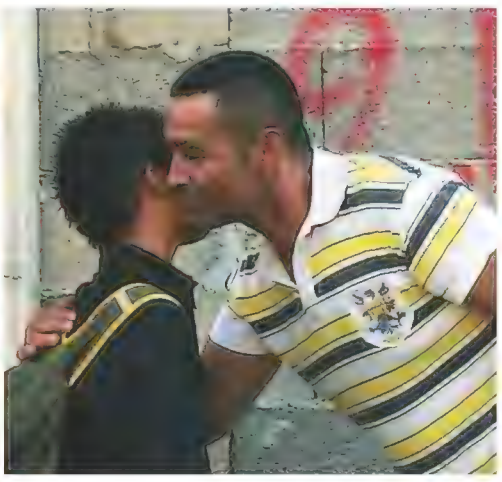
(INSET) ADOC-PHOTOS / ART RESOURCE, NY; MAP: MIKE REAGAN

coverage of riots erupting in Paris and elsewhere in France. "We told them 'In Paris they are stupid'; 'They are burning their neighbors' cars'; 'Don't fall into that trap,'" Tighilt says. "I didn't want immigrant neighborhoods to be locked up and ghettoized," he recalled. "We have a choice." Either "we surrender these places to the law of the jungle," or "we take it upon ourselves to become masters of our own neighborhoods."

NASSERA BENMARNIA FOUNDED the Union of Muslim Families in 1996, when she concluded that her children risked losing touch with their roots. At her headquarters, I found several women baking bread as they counseled elderly clients on housing and health care. Benmarnia's aim, she says, is to "normalize" the presence of the Muslim community in the city. In 1998, to observe the holiday Eid al-Adha (marking the end of the pilgrimage season to Mecca), she organized a citywide party she dubbed Eid-in-the-City, to which she invited non-Muslims as well as Muslims, with dancing, music and feasting. Each year since, the celebration has grown. Last year, she even invited a group of *pieds-noirs*, descendants of the French who had colonized Arab North Africa and are believed by some to be particularly hostile to Arab immigrants. "Yes, they were surprised!" she says. "But they enjoyed it!" One-third of the partygoers turned out to be Christians, Jews or other non-Muslims.

Though a devout Catholic, Marseille's mayor, Jean-Claude Gaudin, prides himself on close ties to Jewish and Muslim communities. Since his election in 1995, he has presided over Marseille-Espérance, or Marseille-Hope, a consortium of prominent religious leaders: imams, rabbis, priests. At times of heightened global tension—during the 2003 invasion of Iraq, for example, or after the 9/11 attacks—the group meets to talk things over. The mayor has even approved construction, by the Muslim community, of a new Grand Mosque, expected to begin next year on two acres of land set aside by the city in the northern neighborhood of St. Louis overlooking the port. Rabbi Charles Bismuth, a member of Marseille-Espérance, supports the project as well. "I say let's do it!" he says. "We don't oppose each other. We are all heading in the same direction. That is our message and that is the secret of Marseille."

It's not the only secret: the unusual feel of the downtown, where immigrant communities are only a stone's throw from the historic center, is another. In Paris, most notably, immigrants tend not to live in central neighborhoods; instead most are in housing projects in the *banlieues*, or suburbs, leaving the heart of the city to the wealthy and the tourists. In Marseille, low-rent apartment buildings, festooned with laundry, rise only a few dozen yards from the old city center. There are historical reasons for this: immigrants settled not far from where they arrived. "In Paris, if you come from the banlieues, to walk in the Marais or on the Champs-Élysées, you feel like a foreigner," says Stemmler. "In Marseille, [immigrants] are already in the center. It is their home." Sociologist Viard told me, "One of the reasons you burn cars is in order to be seen. But in Marseille, kids don't need to burn cars. Everybody already knows they are there."



Marseille's civic leaders (from left, sociologist Jean Viard, social worker Kader Tighilt, mayor Jean-Claude Gaudin, community spokesman Clément Yana, facing) have worked together to keep ethnic tensions under control. "We don't oppose each other," says rabbi Charles Bismuth. "We are all heading in the same direction. That is our message and that is the secret of Marseille."

THIRD FROM LEFT: PRESS OFFICE, MARSEILLE

Ethnic integration is mirrored in the economy, where Marseille's immigrants find more opportunity than in other parts of France. Joblessness in immigrant neighborhoods may be high, but it's not at the levels seen in Paris banlieues, for example. And the numbers are improving. In the past decade, a program that provides tax breaks to companies that hire locally is credited with reducing unemployment from 36 percent to 16 percent in two of Marseille's poorest immigrant neighborhoods.

But the most obvious distinction between Marseille and other French cities is the way in which Marseillais see themselves. "We are Marseillais first, and French second," a musician told me. That unassailable sense of belonging pervades everything from music to sports. Take, for example, attitudes toward the soccer team, Olympique de Marseille, or OM. Even by French standards, Marseillais are soccer fanatics. Local stars, including Zinedine Zidane, the son of Algerian parents who learned to play on the city's fields, are minor deities. "The club is a religion for us," says local sports reporter Francis Michaut. "Everything you see in the city develops from this attitude." The team, he adds,

In the bustling neighborhood of Cours Julien, cafés and boutiques cater to a diverse, bohemian crowd. "Marseille is becoming a new city," says Moroccan-born meatpacking entrepreneur El Hassan Bouod. "It is realizing its place as the second city of France."

has long recruited many of its players from Africa and the Arab world. "People don't think about the color of the skin. They think about the club," says Michaut. Éric DiMéco, a former soccer star who serves as deputy mayor, told me that "people here *live* for the team" and the fans' camaraderie extends to kids who might otherwise be out burning cars. When English hooligans began looting the downtown following a World Cup match here in 1998, hundreds of Arab teenagers streamed down to the Vieux Port on Vespas and old Citroën flatbeds—to battle the invaders alongside French riot police.

SOME 2,600 YEARS AGO, legend has it, a Greek mariner from Asia Minor, named Protis, landed in the inlet that today forms the old harbor. He promptly fell in love with a Ligurian princess, Gyptis; together they founded their city, Massalia. It became one of the ancient world's great trading centers, trafficking in wine and slaves. Marseille survived as an autonomous republic until the 13th century, when it was conquered by the Count of Anjou and came under French rule.

For centuries, the city has lured merchants, missionaries and adventurers from across the Middle East, Europe and Africa to its shores. Marseille served, too, as a safe haven, providing shelter for refugees—from Jews forced out of Spain in 1492 during the Spanish Inquisition to Armenians who survived Ottoman massacres early in the 20th century.

But the largest influx began when France's far-flung French colonies declared independence. Marseille had been the French Empire's commercial and administrative gateway. In the 1960s and '70s, hundreds of thousands of economic migrants, as well as the pieds-noirs, flocked to France, many settling in the area around Marseille. Amid ongoing economic and political turmoil in the Arab world, the pattern has continued.

The coming of independence dealt a blow to Marseille's economy. Previously, the city had flourished on trade with its African and Asian colonies, mainly in raw materials such as sugar, but there was relatively little manufacturing. "Marseille profited from trade with the colonies," says Viard, "but received no knowledge." Since the mid-1980s, the city has been reinventing itself as a center for higher education, technological innovation and tourism—the "California" model, as one economist described it. Along the waterfront, 19th-century warehouses, gutted and refitted, today provide luxury office and living space. A silo, once used to store sugar offloaded from ships, has been transformed into a concert hall. The old Saint-Charles train station has just been completely renovated, to the tune of $280 million.

While Marseille may lack the jewel box perfection of Nice, a two-hour drive away, it boasts a spectacular setting—some 20 beaches; picturesque islands; and the famous *calanques*, or fiords, where rugged coves and scuba-diving waters are just minutes away. And for anyone willing

Of the city's 800,000 citizens, there are 200,000 Muslims, 80,000 Armenians, 80,000 Jews, 70,000 Comorans and 3,000 Buddhists. "What makes Marseille different," says Jewish community leader Clément Yana, "is the will not to be provoked."

to explore the city on foot, it yields unexpected treasures. From the top of Notre-Dame-de-la-Garde, the 19th-century basilica, views of the city's whitewashed neighborhoods, islands and the Estaque coast stretch to the west.

Back in the city center, Le Panier (*panier* means basket, perhaps connected to the fact that the ancient Greeks' marketplace thrived here) has preserved a quiet charm, with little traffic and coffeehouses where one can snack on a bar of dark chocolate, a local specialty. In the heart of the district, a complex of recently restored 17th-century buildings, La Vieille Charité, houses world-class collections of Egyptian and African artifacts. The extensive holdings, from 21st dynasty sarcophagi to 20th-century central African masks, contain treasures brought back over the centuries from the outposts of the empire.

The port is rightly celebrated, too, for its traditional dishes, particularly bouillabaisse, the elaborate fish soup incorporating, among other elements, whitefish, mussels, eel, saffron, thyme, tomato and white wine. Back in the 1950s, a young Julia Child researched part of her best-selling 1961 cookbook, *Mastering the Art of French Cooking*, in fish markets along the Vieux Port. She compiled her recipes in a tiny apartment overlooking the inner harbor. The plain-spoken Child may have called the dish "a fish chowder," but the surging popularity of bouillabaisse today means that in one of Marseille's upscale waterfront restaurants, a serving for two with wine may set one back $250.

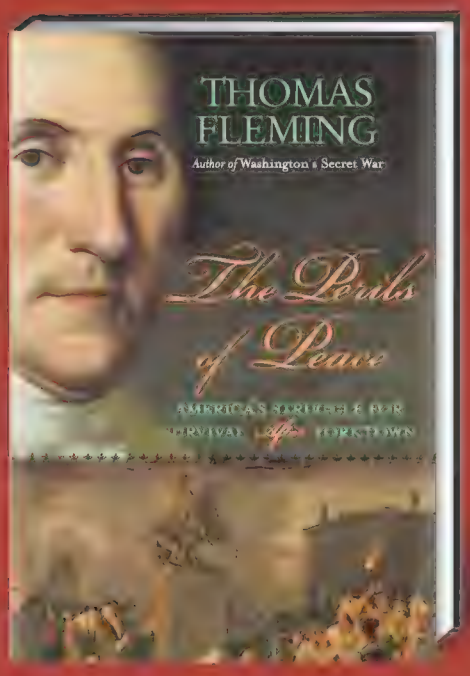
On any given evening, in clubs that fringe La Plaine, a district of bars and nightclubs about a 15-minute walk up the hill from the Vieux Port, global musical styles, from reggae to rap to jazz to West African rap-fusion, pound into the night. As I strolled along darkened cobblestone streets not long ago, I passed a salsa club and a Congolese band playing in a Jamaican style known as rub-a-dub. On the outside wall of a bar, a mural showed a golden-domed cathedral set against a fantastical skyline of mosques—an idealized vision of a multicultural city on a cobalt blue sea that bears a striking resemblance to Marseille itself.

Not long before I left the city, I met with Manu Theron, a percussionist and vocalist who leads a band called Cor de La Plana. Although he was born in the city, Theron spent part of his childhood in Algeria; there, in the 1990s, he played in Arab cabarets, clubs he likens to saloons in the Wild West, complete with whiskey, pianos and prostitutes. Also around that time, he began singing in Occitan, the centuries-old language related to French and Catalan, once spoken widely in the region. As a youngster in Marseille, he had sometimes heard Occitan. "Singing this language," he says, "is very important to remind people of where they come from." Nor does it bother him that audiences don't understand his lyrics. As a friend puts it, "We don't know *what* he is singing about, but we like it anyway." The same might be said of Marseille: in all its diversity, the city may be difficult to comprehend—but somehow, it works.

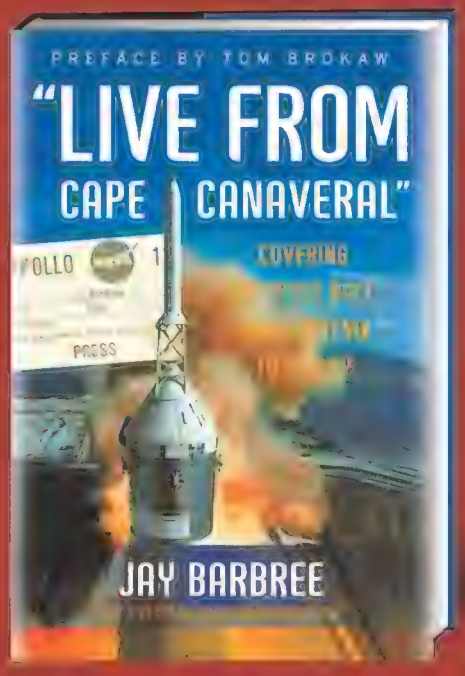
For Julia Child's bouillabaisse à la Marseillaise, visit Smithsonian.com/bouillabaisse

Perfect Holiday Gifts for the Whole Family

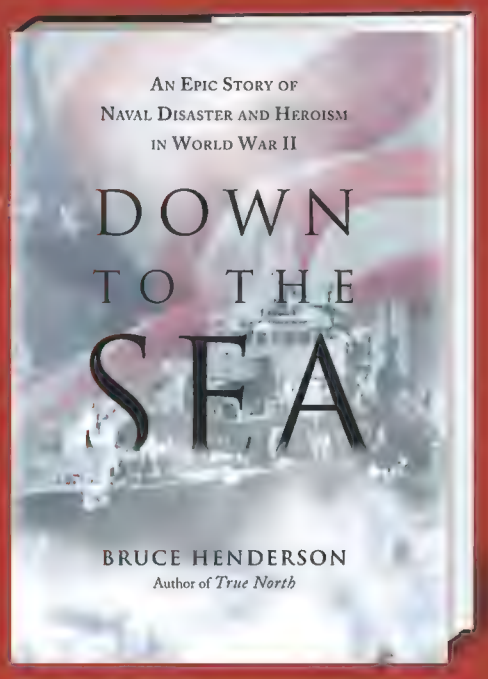
from Smithsonian Books



Thomas Fleming breathes new life into General George Washington's tumultuous struggle for peace after the battle of Yorktown.
$27.95 • 352 pages

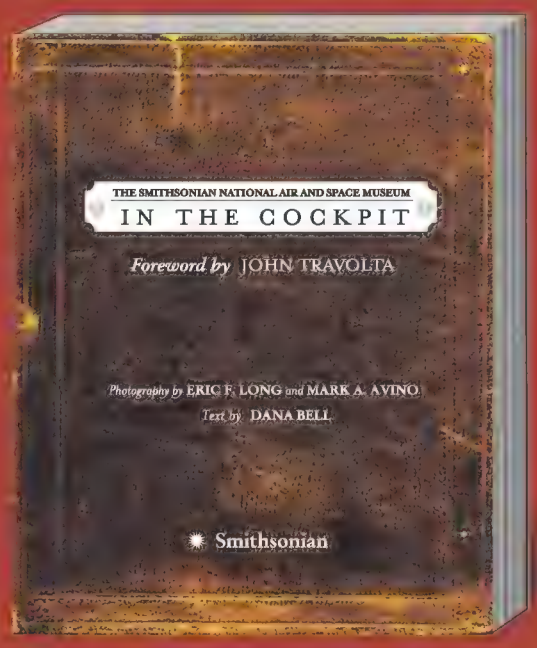


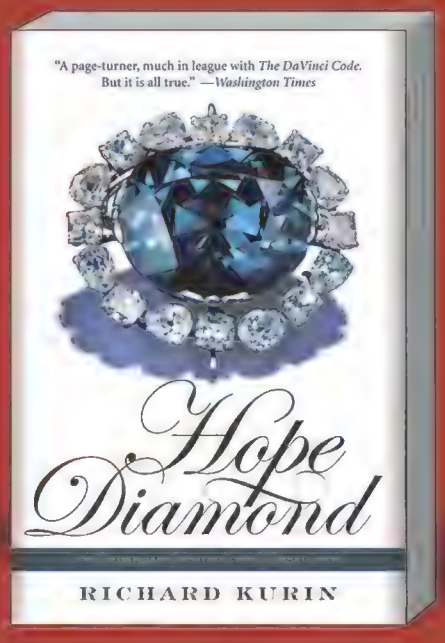
NBC's veteran space correspondent Jay Barbree celebrates the greatest moments in space from Sputnik to today.
$26.95 • 321 pages



A riveting account of one of the greatest naval dramas of World War II pulled from the epic true stories of survivors and rescuers.
$26.95 • 368 pages

Featuring a range of aircraft, this is a must-have volume for armchair aviators and history buffs.
$24.95 • 143 pages


THE SMITHSONIAN NATIONAL AIR AND SPACE MUSEUM
IN THE COCKPIT
Foreword by JOHN TRAVOLTA
Photography by ERIC F. LONG and MARK A. AVINO
Text by DANA BELL
Smithsonian



From the diamond mines of India to Fifth Avenue, learn the rich history behind the most infamous gemstone in the world.
$24.95 • 388 pages
Also available in paperback

And Fun Nonfiction for Kids with Questions

HarperCollinsChildrensBooks
www.harpercollinschildrens.com

Includes fabulous close-up photos and hard questions with crystal clear answers.
$16.99 • 48 pages

Dig up the real dirt on dinosaurs in this ferociously big book.
$16.99 • 48 pages

More than 100 photos showcasing rare baseball treasures.
$16.99 • 58 pages

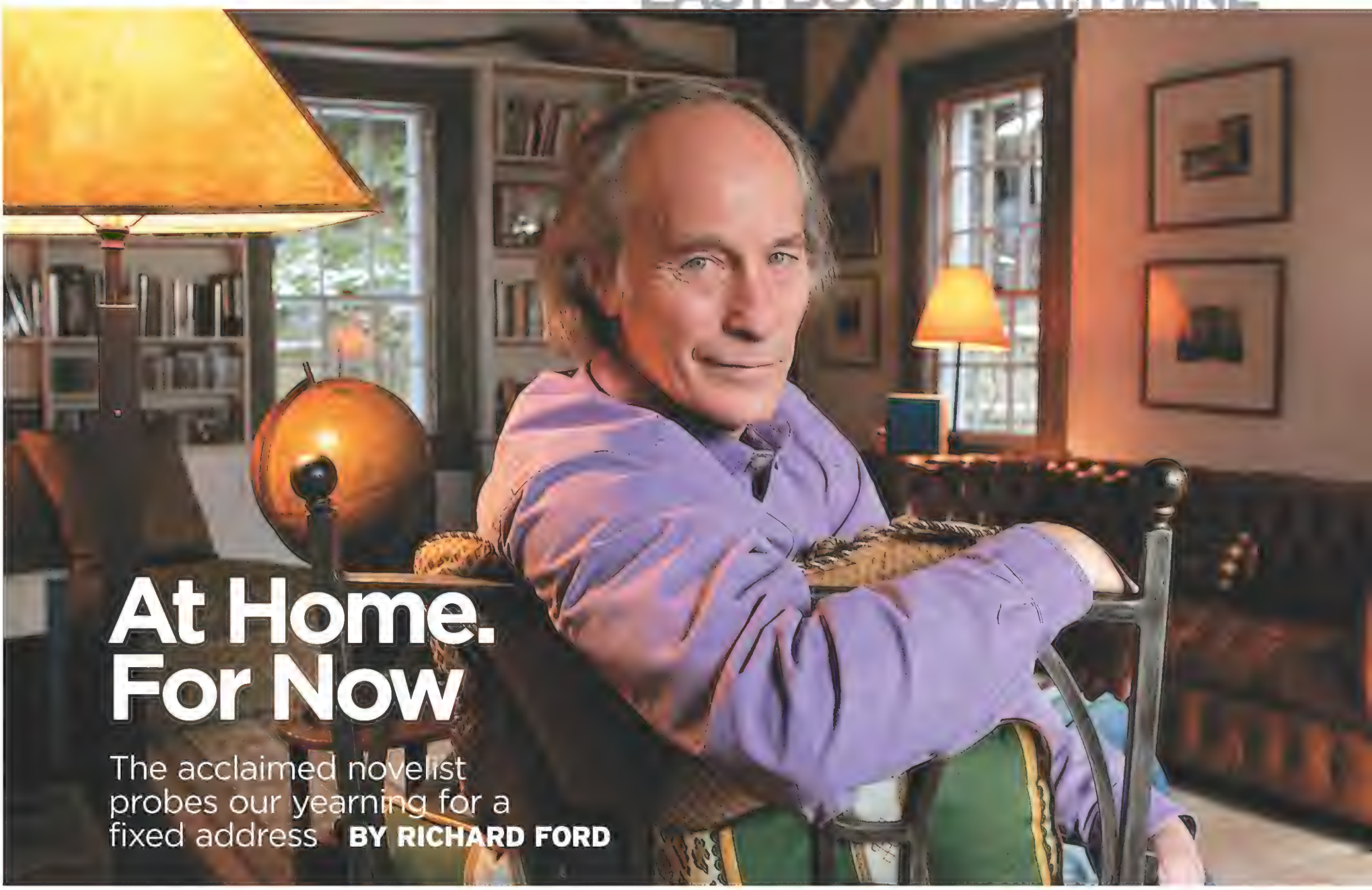
Take a fascinating tour of the solar system.
$19.99 • 63 pages

Smithsonian

Available at www.SmithsonianStore.com,
by calling 800-322-0344, or wherever books are sold.

Collins
An Imprint of *HarperCollins* Publishers

EAST BOOTHBAY, MAINE



At Home. For Now

The acclaimed novelist probes our yearning for a fixed address **BY RICHARD FORD**

I DON'T THINK about home very much. I mean, the concept of home—the direction finder we're all supposedly equipped with, that leads us onward (or back) to the place we belong, where we'll be . . . what? Happy? At peace? At rest? Permanent? I'm not really sure. Which is one underlying reason I don't think about home much. I don't know what it means.

Oh, I know some of what home means—to other people. That direction-finder idea is somebody else's. Home means, simply enough, where you come from, where you're born and where they always have to take you in (though we all know they don't). Home can also partake of "final matters"—where you want to be, in the last analysis of things. Or home can be where you choose to live, because that's where you like it best. In this last version, home would be a designation you make, not so different from your "weekend home," or from "my hunting cabin on Lake Winnipegosis." Nothing necessarily lasting. When my wife and I visit some faraway city and fetch up in a gloomy Ramada or Crowne Plaza, she will often, at the end of a long evening, gaze across the dinner table at me and smile and say, "Why don't we go home now?" By that she doesn't mean, why don't we go back to the place where you were born, or let's go visit our grave site. She just means let's go back to the room and

"I'll never be a native here," says the author (above) of East Boothbay (left). "I'm already a native someplace else, but I like it here better."

PAT WELLENBACH / AP IMAGES; CARL WALSH / AURORA SELECT

get in bed. Home, in my wife's parlance, and in all of ours, is a variable concept.

Because I'm the kind of person who does this sort of thing, I looked "home" up in the Oxford English Dictionary. And I'm sorry to say that this venerable old word coffin doesn't have any firmer purchase on home than I do. In fact, it has a much less firm one than I do, by virtue of having many different purchases: from the predictable "abode, fixed residence, seat of one's interests, resting place"—all the way out to "the grave," or a future state, or one's country, or a place free from attack (no longer true of the United States), then onward to "state of unrestraint," prepared to receive visitors, full in from the sea, and extending all the way to "to move intimately," that is, to "home" in on something, which has nothing to do with where we live. I could go on, because the OED does—four and a half pages of "homes," in the big-print edition (which you have to keep at home). Anyone would close the big blue book with a confirmed sense that home is, indeed, a subject worthy of serious speculation, but for which a tidy definition (like the one, say, for "homarine," the generic name for the lobster) isn't going to be good enough.

There are many "humble possibilities of belonging," says Richard Ford. Getting served "the usual" at the Ebb Tide might count.

OVER THE YEARS I'VE lived in a lot of American places—California, Vermont, Chicago, New Jersey, New Orleans, Flint, Michigan. And plenty more. I can't really explain why I've done that, but I never thought any of these places were home when I lived there. Sometimes all this barging around will baffle someone, so I'll feel compelled to offer up one or another entirely made-up rationale for all this hectic moving: that my father was a traveling salesman, so I caught the moving bug early; that my grandparents ran a big hotel, so transience seemed normal to me; that when you're born and raised in Jackson, Mississippi (as I was), you either think you live at the center of the universe, or else you think you live on Pluto—which is what I thought. Or the quasi-intellectual rationale: that much drama in all things American draws upon the rub between an inherited European or African village past (where you have to stay home) and the magnetism of a vast new continent (where you hit the road). But they all come down to mean roughly the same thing: that moving's not unusual, but still home's a notion we routinely put in play, and that I myself am just an ordinary fish aswim in a confluence of swirling currents.

THOUGH IN THE COURSE of all these many moves, and in the many residences that have resulted, I've almost always had my feelers out for some certifiable sense of home-ness. You could say, in spite of all, that I've been "home-hungry" all my life—nosing around, sampling the genie spirit or the townscape of some new burg or county where I've somehow landed, determining where this or that road leads, musing about what family lives in this or that house, or used to live there, and for how long and how all that worked out for them. I've pictured my history or my future in whatever place it was—Missoula, Montana; Greenwood, Mississippi; Ann Arbor—always hoping, expecting to feel something *enfolding*, something protectively familiar, some sensation of belonging. (You can tell from this that I've settled on the idea of home as a place I choose, rather than a place where I was simply, will-lessly born.)

AND, TRUTHFULLY, once in a while that homey-enfolding feeling has actually welled up in me, its rich ethers filling my nose, my heart surging, my brain spangling with all the lavish yet humble possibilities of belonging: of being automatically served "the usual" at my favorite diner, of being fast-tracked into the dentist's chair when my molar's cracked; of being on a first-name basis with the service guy at the Chevy dealership so my truck gets out by 10; of having free entry to our one-screen movie theater when I've forgotten my billfold but everybody trusts me; of neighbors who've all read all of my books and understood and enjoyed them because they talk about them when I'm not around. I've savored all these symptoms of home. Though admittedly I've experienced them the way I used to dream of playing fullback for the Packers, or of kicking the bejesus out of some tough guy who'd stolen my girlfriend; or of being able to play "Sentimental Journey" to an astonished crowd of those same neighbors at the opera house when the scheduled act doesn't show up, even though I'd never played the saxophone before. Which is to say they were, these ethers and heart-swellings, as fleeting as a dream. But a good dream. (Generally they last only long enough for me to grow skittish about all the less appealing attributes of home—permanence setting in like an acrid fog, the flavorless absence of the new, the raw bestilled boredom of imprisoning familiarity—the same life worries that propel desperate men off to the Foreign Legion, or that once sent wide-eyed and fearful homesteaders out across the oceanic prairie to nowhere, yet to whatever's next.)

CARL WALSH / AURORA SELECT

Your bed should make
stress
go away

The RhapsodyBed
by Tempur-Pedic™

Imagine a place where stress is relieved and the pressures of the day seem to just melt away. And what if you could go there tonight… *and every night.*

At Tempur-Pedic,® *we believe* your bed should make stress go away.

Unlike traditional mattresses which can *create pressure*, our unique Swedish TEMPUR® material actually *absorbs pressure*.

We invite you to learn more about our science... and experience our soul.

TEMPUR-PEDIC

welcome to bed™

Call for your Night-time Renewal™ kit
with FREE In-Home Tryout Certificate

888-461-5055

Or visit us at **www.tempurpedic.com**

©Copyright 2007 by Tempur-Pedic North America, Inc. All Rights Reserved. Furniture components not included.

Have we always had a sense of home, I wonder? Did it come to us straight from the cave men and cave women? Or, possibly, from the resourceful Dutch—ever focused and grounded—who're said to have perfected the home concept along the way to inventing bourgeois existence? But more important, is it so bad if we don't have a rock-solid sense of home? Or only have a weak one? Or maybe just don't have one *yet*? Home-less-ness is always imagined, in our security-obsessed era, as a bottomed-out and desperate state, akin to being a man without a country or to a life like a character in a Beckett play or that figure in the Munch painting—gaping, yawing, moaning, at-risk pointlessness. Only I wonder if *all* the residents of that state think it's so bad? I bet not.

WHERE I LIVE, here on the coast of Maine, I frankly don't have much of a daily, practicing sense of home. I've been here nearly eight years, and so far the people seem friendly. (There *are* a few "originals," old and young farts who sneer at the likes of me for being from "away"; though many of these originals turn out to be from New Hampshire.) There's a small but detectable racial "mix." And there's a good feeling of authenticity to things, which I'm sure I benefit from. (Authenticity is the corroborating sensation that all Americans crave but are also perfectly happy to fabricate wherever it's lacking.) Here in East Boothbay (estimated permanent population 491), authenticity rests principally on the presence of history in everyday affairs—on the way citizens find a living (fishing and boat building); on the old-timey layout of our relatively few streets (School Street, Church Street), which persists unviolated by developers' schemes; on the placement of long-established residences; on the resilience of our few business concerns; and on the fact that many families have stayed in one place a long, long time. In other words memory—that great certifier—is still relatively seamless and reliable in East Boothbay. And, of course, much confidence is owed to our town's face being turned everlastingly to the sea.

Many residents, but not the author, gather at the general store. "Is it so bad if we don't have a rock-solid sense of home?" he asks.

How I traffic around here is, I would say, respectfully, though not reverentially, toward all these solid evidences of the unspurious. The waitresses at the Ebb Tide can't remember what I usually order (I don't come in enough), but they seem silently to concede that I'm me. The men at Grover's Hardware (all jolly amateur comedians) are happy to share their yuks with me, though they don't seem to know my name or care what I do for a living. I've discovered places to hunt only minutes from my house—a good reason to stay on. I know my neighbors and the postmistress and her two sons. I have a pal who takes me striper fishing. And I like it here in the winter, Maine's signature season, the true test for the outsider.

YET, HERE'S THE OCEAN, but I'm not a seafarer (the Atlantic, frankly, scares me). I don't have much taste for lobster. I don't assemble mornings at the general store, and I don't wear the high-school sweat shirt (I did buy a cap at the fire department open house but have never had it on). When I first arrived, and in the privacy of my house, I liked imitating the Mainers' thick-tongued, Down East accent. But over time I've quit doing that since it finally dawned on me I wasn't very good at it.

But taken all together, isn't that good enough? I'll never be a native here—which seems OK. I'm already a native someplace else, but I like it here better. Plus, we're all Americans. (It's not as if I was French.) Isn't that a persuasive profession of faith? Can authenticity only be a matter of accidents—of fate and temperament? I've always imagined my authenticity (which may be as close as I get to a real sense of home) depended on something else—something less, well, official. "To find my home in one sentence," the poet Czeslaw Milosz wrote, "concise, as if hammered in metal." Something along those lines seems right and makes anything else just a matter of real estate.

HOME DOESN'T GET any clearer than this for me. Most of the ageless essences I've sought and ultimately failed to inhabit in the pure and purifying way I thought I should and was sure everyone else did (I'm talking about home, love, victory, vocation, spirituality, loss, grief—all the big-ticket items), I finally had to conclude weren't perfectly inhabitable anyway. One size doesn't fit all, if it ever fits any of us. All the ageless essences demand not to be squeezed into like an ill-fitting suit, but rather to be incantations to flights of fruitful imagination, like a jollier version of the emperor's new clothes, which put on display—favorably, in my version—merely who the wearer is. Home, then, is whatever I say it is, even if it's just for today and I change my mind tomorrow. It's enough for me that, after all these years, I still can even think about home, still imagine it as a sweet notion—ever offshore, ever out of my reach, a place locked in a dream.

RICHARD FORD'S *latest novel,* The Lay of the Land, *was recently issued in paperback.*

CARL WALSH / AURORA SELECT

TECH GALLERY: Hot List 2007

The perfect gifts for the holiday season

PENTAX K10D

The PENTAX K10D features 10.2 effective megapixels, PENTAX-developed Shake Reduction (SR), a Pentax Real IMage Engine (PRIME), and a Dust Removal (DR) system all housed in a dependable dust-proof, weather-resistant body. Perfect for advanced photo enthusiasts on the go.

pentaxslr.com

PENTAX®

PENTAX PHOTO GALLERY

PENTAX offers shooters around the world to be represented in the PENTAX Photo Gallery and share their most defining moments of photography. This virtual Photo Gallery is the first of its kind for passionate PENTAX photographers to exhibit their work.

pentaxphotogallery.com

DELL LATITUDE D630

The Dell Latitude D630 is designed to deliver an outstanding mix of performance, graphics and mobility — all packed into a sleek, lightweight design.

Starting at $849

DELL.COM/SMBLatitude 800.395.4270

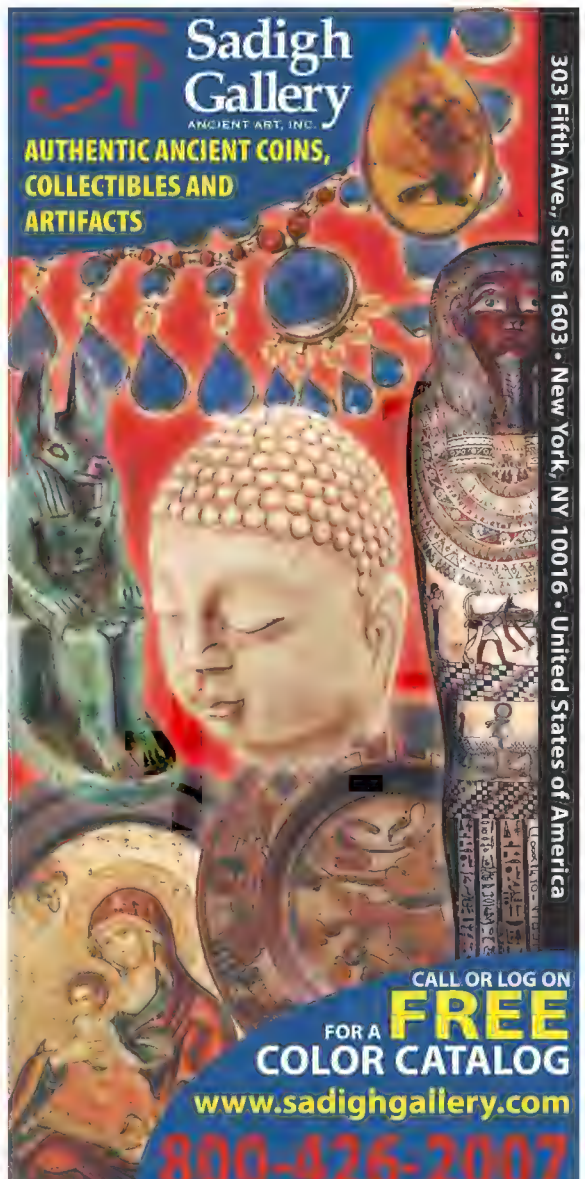
DELL

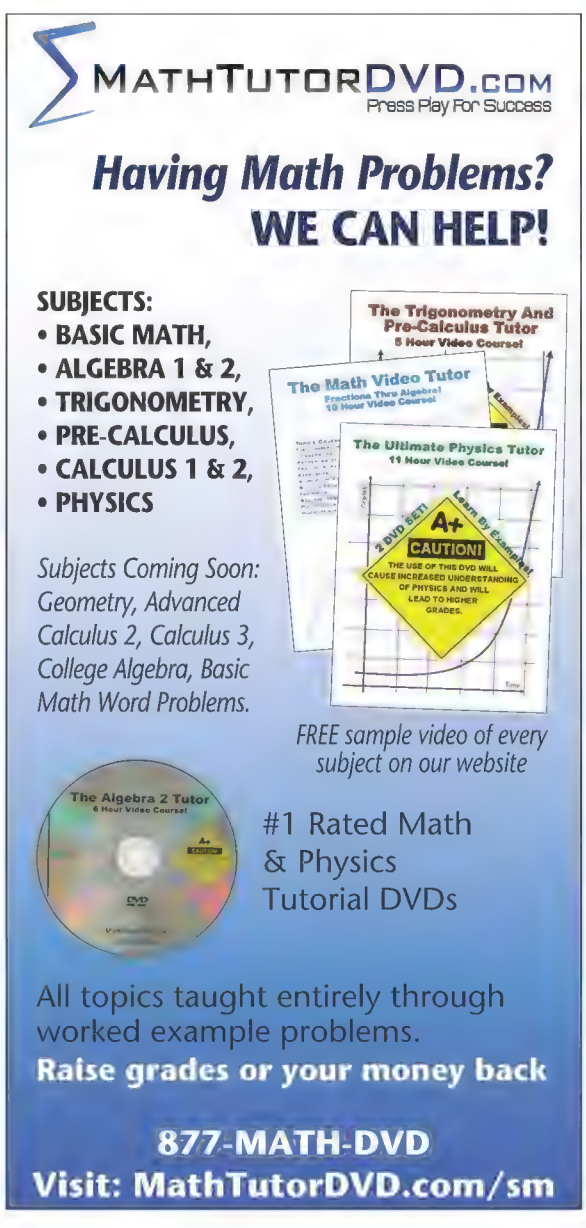
GIFT GUIDE

Chef's Mat by Gel Pro

Finally, you can spend time in the kitchen creating your favorite meals without the pain and discomfort caused by hard kitchen floors! As seen on HGTV, Gel Pro Mats are filled with a soft gel that makes standing on even the hardest kitchen floor a pleasure. These innovative mats are scientifically engineered to absorb shock and reduce pain-causing pressure. Enjoy time spent in the kitchen even if you suffer from back pain, foot pain or arthritis. Designer colors in traditional and exotic textures. Available in many sizes and all mats are stain resistant. Don't worry about red wine or pasta sauce spills—clean-up's a breeze! Proudly made in the USA. Makes a great gift! Order today.

www.gelmats.com
866-GEL-MATS (435-6287)


Sadigh Gallery
ANCIENT ART, INC.
AUTHENTIC ANCIENT COINS, COLLECTIBLES AND ARTIFACTS
303 Fifth Ave., Suite 1603 • New York, NY 10016 • United States of America
CALL OR LOG ON
FOR A FREE COLOR CATALOG
www.sadighgallery.com
800-426-2007


MATHTUTORDVD.COM
Press Play For Success
Having Math Problems?
WE CAN HELP!
SUBJECTS:
• BASIC MATH,
• ALGEBRA 1 & 2,
• TRIGONOMETRY,
• PRE-CALCULUS,
• CALCULUS 1 & 2,
• PHYSICS
Subjects Coming Soon: Geometry, Advanced Calculus 2, Calculus 3, College Algebra, Basic Math Word Problems.
The Trigonometry And Pre-Calculus Tutor
5 Hour Video Course!
The Math Video Tutor
Fractions Thru Algebra!
10 Hour Video Course!
The Ultimate Physics Tutor
11 Hour Video Course!
2 DVD SET!
Learn By Example!
A+
CAUTION!
THE USE OF THIS DVD WILL CAUSE INCREASED UNDERSTANDING OF PHYSICS AND WILL LEAD TO HIGHER GRADES.
FREE sample video of every subject on our website
The Algebra 2 Tutor
6 Hour Video Course!
#1 Rated Math & Physics Tutorial DVDs
All topics taught entirely through worked example problems.
Raise grades or your money back
877-MATH-DVD
Visit: MathTutorDVD.com/sm

www.motionmodels.com
THE WORLDS FINEST READYMADE AND CUSTOM TRUE MUSEUM QUALITY AIRPLANE AND NAVY AND COAST GUARD SHIP MODELS
USS GEORGE H.W. BUSH CVN-77 CUSTOM MADE FOR NORTHROP GRUMMAN AND PRESIDENT BUSH
MOST NAVY AND COAST GUARD SHIPS AVAILABLE
COAST GUARD
www.motionmodels.com
1-800-866-3172

GIFT GUIDE

Eastport Men's Vest

100% plush merino wool. Full button closure. Warm and breathable. May be worn on its own or under your favorite coat for superior layering warmth. Inside pockets. Made in Maine. Med, L, XL $198. XXL $219. Black, Charcoal, Hunter Green, Camel. Call 1-888-222-9665 or order online at:

Casco Bay Wool Works

www.cascobaywoolworks.com

The California Wine Club

Since 1990, we've been featuring California's best, small "mom & pop" wineries. Deliveries include two bottles of award-winning wine and the club's entertaining magazine, Uncorked® ($34.95/mo. + S/H & tax if applicable.)

1-800-777-4443
www.cawineclub.com

Mexico's Copper Canyon Roundtrip Train

$995 8 Day Tour
Call for Choice Dates

Caravan makes it easy and so affordable for you to explore the magnificent region of Mexico's Copper Canyon. Your Caravan Copper Canyon tour includes all meals, all activities, all hotels, a great itinerary, roundtrip train ride, transportation and excursions within Mexico.

A professional Caravan tour director accompanies you for the entire tour. Your tour is conducted from start to finish by professional tour directors. They are fluent in English, experienced and fun.

Join the smart shoppers and experienced travelers who rely on Caravan to handle all the details while you and your family enjoy a well-earned, worry-free vacation in Mexico's Copper Canyon. Or, choose from one of our other tours, priced at just $995. Call today.

Caravan's Copper Canyon Train Ride
The Chihuahua-Pacifico Railway, completed in 1961, after 90 years of construction, is a modern marvel of engineering. With Caravan you travel both the south and the north route in a spacious air-conditioned chartered first class train car.

Comfort and Safety, First Class Car
Caravan has reserved an entire first class train car. For your comfort, there are always more seats in your car than there are clients. For your health, animals are not permitted in your car. For your safety, the seats in your train car are only available to Caravan clients and are not open to the general public.

Choose Your Tour—Only $995

8 days	Canadian Rockies
8 days	Nova Scotia, Prince Edward Isl.
8 days	Grand Canyon, Zion, Bryce
8 days	Mount Rushmore, Yellowstone
8 days	California Coast and Yosemite
8 days	**Mexico's Copper Canyon Train**
8 days	Mexico's Ancient Civilizations
11 days	Guatemala
10 days	Costa Rica

FREE Info Guide

Fully Escorted Tours Since 1952

Caravan.

Caravan.com 1-800-Caravan

Most Caravan tours are $995 pp, dbl. occ., plus taxes and fees

–Since 1941–
THE ORIGINAL
WOODMAN'S PAL® trademark
BOYERTOWN, PENNSYLVANIA MADE IN USA

- Ideal Personal/Business Gift!
- Handcrafted in PA since 1941
- Brush Axe - Sickle Hook
- Clear Brush/Prune Landscape/Blaze Trails
- Landowners
- Sportsmen
- Campers

custom engraving

SM Free Information - Dealers Welcome

1-800-708-5191 M-F/9-5
www.woodmanspal.com

CABOT® Vermont

Owned by Dairy Farmers Since 1919

Shop online for the World's Best Cheddar.

New cheddars ***(Smoked & Sage)***, gift packages, waxed wheels and blocks and other Vermont-made treasures from the farm-family owners of Cabot.

For Corporate Gifts shop: cabotgifts.com/sm

shopcabot.com/sm · 800.639.3198

Best Home Weather Station!

Vantage Pro2™ weather stations monitor temperature, wind, rain, barometric pressure, and more. Quick-view icons show forecast. On-screen graphing gives instant analysis. Get WeatherLink® software for your PC. Starts at $495. **Call today for FREE catalog at:**

1-800-678-3669 SM0712

DAVIS **www.davisnet.com**

Enjoy More Affection with Biologist's Pheromones.

Developed by Dr. Winnifred Cutler, co-discoverer of human pheromones in 1986.

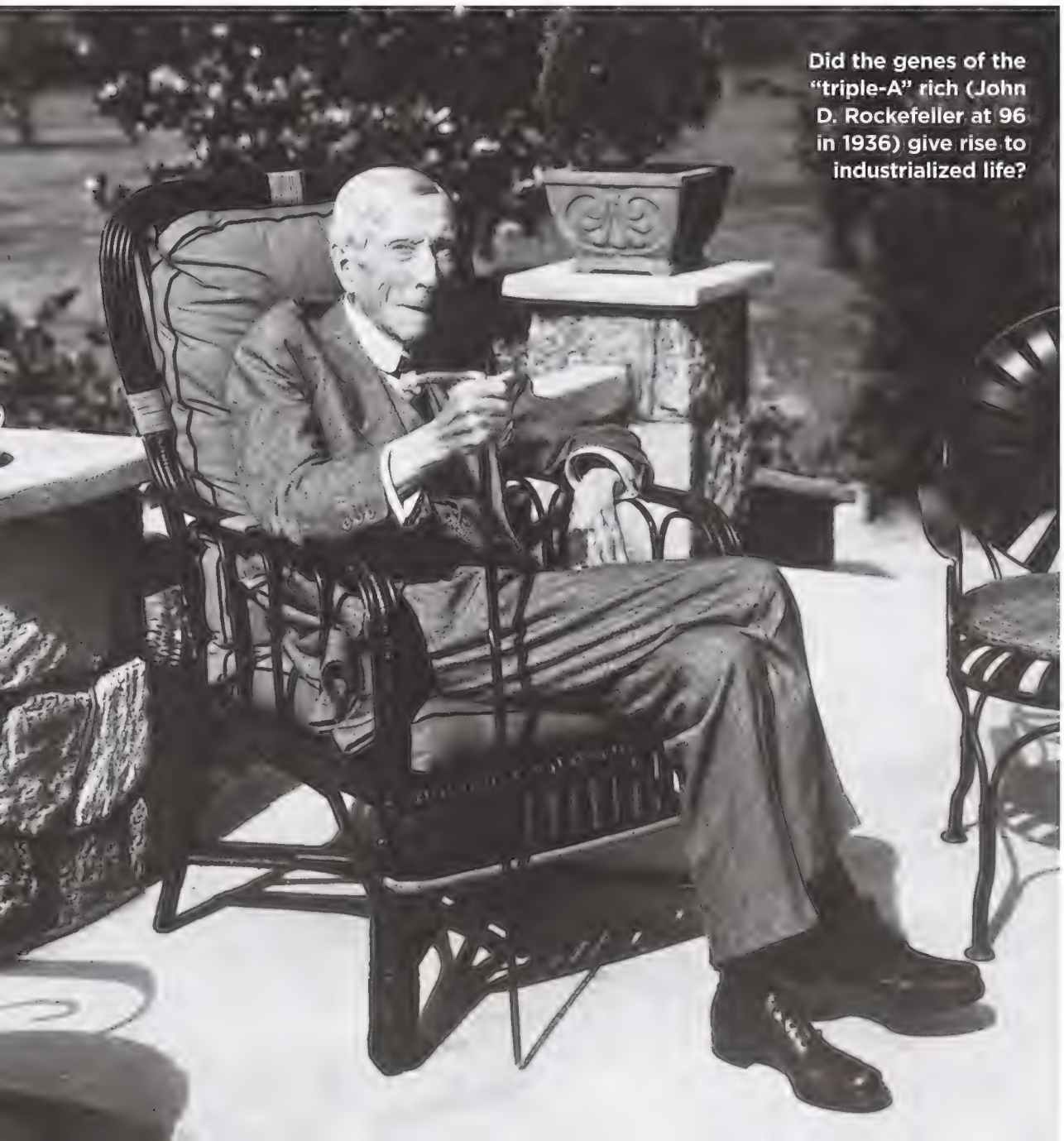
"Both my wife and I use your Athena Pheromone products and feel we are starting a new relationship with each other." —Gene, TX

www.Athenainstitute.com ✦ 610-827-2200

Blame the Rich

They made us who we are, some researchers now say **BY RICHARD CONNIFF**

ON A BEAUTIFUL summer day in 1899, the fabulously wealthy Alva Vanderbilt Belmont sponsored a "motor carriage" parade on the lawn of her "cottage" in Newport, Rhode Island. The festivities included an obstacle course of dummy policemen, nursemaids and babies in carriages, with a prize going to the driver who "killed" the fewest of these innocent bystanders. Alva's son Willie K. went on to sponsor the first major trophy in American auto racing. (And at an early Vanderbilt Cup race, an innocent bystander was killed for real.)



Did the genes of the "triple-A" rich (John D. Rockefeller at 96 in 1936) give rise to industrialized life?

AKG-IMAGES

So let's add auto racing to the long list of great ideas brought to you by what Canadian archaeologist Brian Hayden calls "triple-A" self-aggrandizers—people who are aggressive, acquisitive and ambitious about getting what they want. Hayden acknowledges that other words starting with "a" may also come to mind. Arrogant, say. Or even alarming.

But let's just call them rich.

In our hearts, we like to think that all the great ideas and inventions have come from salt-of-the-earth, self-made men and women. But students of "affluenza," the social condition of being rich and wanting to be richer, have lately come to credit rich people as the driving force behind almost every great advance in civilization, from the agricultural revolution to the indoor toilet.

This is of course a disconcerting idea, even for the researchers who have proposed it. And plenty of other researchers say they are wrong. But before we crank up our moral dudgeon, we should know that the rich in question are almost certainly family. Like it or not, we are probably descended from them, according to Michigan anthropologist Laura Betzig.

High status has almost always translated into reproductive success, not just in the animal world, but for humans, too. This phenomenon started back in our hunter-gatherer days, when the men who brought home the most meat won the most mates, and it has continued up through the likes of J. Paul Getty and Donald Trump. Betzig's research piled up historical examples, including extreme cases such as the Aztec strongman Montezuma, said to have kept 4,000 concubines, and a Chinese emperor

NEW
Rosetta Stone® Version 3

One day, his son would speak to the world.

He wanted them to understand.

Introducing
Rosetta Stone® Version 3.
The fastest and easiest way
to learn RUSSIAN.

Introducing Rosetta Stone® Version 3!
The world's leading language-learning software just got better.

NEW Version 3	**Arabic**	**English** (American)	**English** (British)	**French**	**German**	**Italian**	**Portuguese** (Brazil)	**Russian**	**Spanish** (Latin America)	**Spanish** (Spain)
Version 2	Chinese Danish	Dutch Farsi	Greek Hebrew	Hindi Indonesian	Japanese Korean	Latin Pashto	Polish Swahili	Swedish Tagalog	Thai Turkish	Vietnamese Welsh

NEW Proprietary speech recognition technology gets you speaking from the start and NEW speech analysis tools perfect your pronunciation.

NEW Contextual Formation™ feature uses real-world simulations to give you the benefits you need to succeed.

NEW Adaptive Recall™ Language feature tracks progress to reinforce your strengths and revisit needs.

NEW Milestone feature lets you try out your new language knowledge in real-life simulations.

IMPROVED Intuitive, sequential learning makes every lesson count and build progressively.

Makes a great gift!

Act now to receive a 10% discount.

Personal Edition. Solutions for organizations also available.
Offer expires Mar. 31, 2008.

Level 1	Level 1 & 2	*Best Value!* Level 1, 2 & 3
Regularly ~~$209.00~~	Regularly ~~$339.00~~	Regularly ~~$499.00~~
NOW $188.10	NOW $305.10	NOW $449.10

Buy with confidence from Rosetta Stone® We offer a six-month money-back guarantee when you buy directly from us. ©2007 Rosetta Stone Ltd. All rights reserved.

The fastest way to learn a language. Guaranteed.™

(866) 202-2372
Use promotional code sss127 when ordering.

RosettaStone.com/sss127

RosettaStone®

ChefsChoice®
Professional Sharpening Station™ 130

☑Sharpen
☑Steel
☑Strop

A lifetime supply of incredibly sharp edges!

For a store near you, call:
800-342-3255
© EdgeCraft 2006 www.chefschoice.com

It's So Easy, I Just Open The Door And Step In!

Walk-in Bath Tubs from Premier

Walk-In Bathtubs By Premier. As we get older bathing can become more of a challenge. Premier has an extensive range of walk-in tubs which have helped improve the lives of thousands of people. Call today or return the coupon and discover which one of our superb walk-in tubs could benefit you the most.

Premier™ Care in Bathing

CALL NOW • TOLL FREE
1-800-578-2899
SOURCE CODE 38127

Families Have Saved Up To 50% On Heating Costs

And never have to buy fuel — wood, oil, gas, kerosene — ever again!

Hydro-Sil is a duct-free/furnace-free high performance room-by-room heating system that can save you hundreds of dollars in home heating costs by replacing old and inefficient heating. It can replace or supplement your electric heat, gas or oil furnace and woodstoves.

Hydro-Sil represents economy in heating: inside the heater case is a sealed copper tube filled with a harmless silicone fluid. It's permanent. You'll never run out. Hydro-Sil "Energy Smart" thermostat controls a variable watt hydro element that is only being supplied a proportional amount of power on an as-needed basis. The silicone liquid is quickly heated, and with its heat retention qualities, continues to heat after the Hydro element shuts off. Hydro-Sil's digital proportional control technology greatly increases energy savings and comfort.

Your Benefits with Hydro-Sil:

- Slash heating cost with Hydro-Sil technology
- Lifetime warranty. No service contracts
- Safe, complete peace of mind
- Clean, no fumes, environmentally safe
- U.L. listed
- Preassembled — ready to use
- No furnaces, ducts, or chimneys
- Portable (110V) or permanent (220V)
- Whole house heating or single room

Order today or contact us for more info.

- Phone
- Web
- Mail

Check ■ MasterCard ■ Visa
1-800-627-9276
www.hydrosil.com
Hydro-Sil, P.O. Box, 662, Fort Mill, SC 29715

220 VOLT PERMANENT	Approx. Area to Heat	Discount Price
8' 2000 watts	250-300 s.f.	$309
6' 1500 watts	180-250 s.f.	$279
5' 1250 watts	130-180 s.f.	$259
4' 1000 watts	100-130 s.f.	$229
3' 750 watts	75-100 s.f.	$189
2' 500 watts	50-75 s.f.	$169
Thermostats	Call for options & exact heater needed	

110 VOLT PORTABLES (Thermostat Included)	Discount Price
5' Hydro-Max 750-1500 watts	$229
4' Convector – Dual watt	$179
3' 750 watts – Silicone	$179
$18.00 shipping per heater	

Traits necessary for economic dynamism—patience, hard work, ingenuity—may have been spread through the population by the reproductive successes of the wealthiest.

whose harem numbered in the tens of thousands. On a lesser scale, the big houses of the British countryside before World War I often accommodated 10 to 20 servants, who were typically young, female and single. "Housemaid Heights," Betzig argues, functioned as a de facto harem for upper-class males. Thus an 1883 investigation in Scotland found that domestic servants accounted for almost half of out-of-wedlock births.

Other researchers have noted the baby-making propensities of alpha males among the Ache Indians of Paraguay and Venezuela's Yanomami. One found that the pinstriped chieftains on the 1982 *Forbes* 400 list of the richest Americans were out-reproducing their fellow citizens by as much as 38 percent.

But what difference does that make?

Not much, it seemed to Gregory Clark when he was first thinking about why the Industrial Revolution started in Britain, rather than in China, say, or India. Clark, an economist at the University of California at Davis, knew that in the past, British cities had an appalling mortality rate and prospered only by consuming a large annual crop of newcomers from the countryside. So he assumed that modern British people were, as he put it in a recent interview, "the remnants of rural idiocy"—that is, descended from less ener-

Montezuma was said to have kept some 4,000 concubines, giving him ample opportunity to disseminate his genes.

getic, less educated types who stayed put on their farms. (The assumption was perhaps a byproduct of Clark's having grown up in an Irish Catholic family in Scotland, a pedigree unlikely to produce either Anglophilia or an admirer of the rich.) But his opinion changed when he undertook a detailed analysis of 3,500 British wills from 1250 to 1650, looking particularly at wealth and reproduction.

"To my surprise, there was a very powerful effect," says Clark. "The wealthy had many more children." He wasn't looking at the aristocracy, who tended to get killed in wars and power struggles (or to wane because of reproductive ennui). Instead, he looked at the enterprising gentry, people a notch or two down the social hierarchy, who devoted their lives to commerce and died in bed. "They had four surviving children in a society where the average was two," Clark says.

Other researchers have argued that the Industrial Revolution got started, in Britain in the 18th century, on the strength of coal and colonies. But in his new book, *A Farewell to Alms*, Clark proposes that what really made the difference was this "survival of the richest." In the relatively stable British climate after 1200, with limited resources and little population growth, "the superabundant children of the rich" in-

NORTH WIND PICTURE ARCHIVES / ALAMY

Boynton Collection

Don we now our Bob,
the carnelian-nosed reindeer

Sterling Silver $75
14K Gold $399

1-800-477-1856
www.dallaspridgenjewelry.com

©Sandra Boynton, All Rights Reserved

actual pin size

Yo-YoGuy.Com
The finest juggling equipment, yo-yos, and unicycles. Featuring the Magnesium Freehand MG by Duncan.
1-800-Yo-YoGuy • Catalog Available

HARTFORD YORK
THE WORLD'S FINEST HATS
Call for free catalog
www.hartfordyork.com | 1.800.936.5646

DISCOVER FEARRINGTON
An Elegant Country Village
near Chapel Hill, NC
www.fearrington.com

Treasure trove for PIRATES!
Arrgh, matey! World's best selection of pirate flags, coins, toys, games, clothing, books. Adding mermaid items. Free catalog.
800-770-9807
DeadMenTellNoTales.com

For our members with disabilities:
An audio version of SMITHSONIAN is now available on tape as part of your basic membership fee.
For more information, please call:
888-783-0001

ZIPPITY RABBIT

Zippity Do Da!
What a wonderful way to open wine!

Our new Zippity Rabbit® is all dressed up with one place to go – to the top of a wine bottle, where it pulls the cork in 3 seconds flat. It's nice that it's chrome-plated with a die-cast body. And it's nice that it comes in a zippered EVA case with a polycarbonate window. But under all the trimmings, the Zippity Rabbit is made for pulling: it's been tested for 20,000 cork pulls* and carries a 10-Year Warranty. That's even nicer.

** Assumes spiral replacement after 1,000 cork pulls*

Where To Go Zippity Rabbit Hunting:
Amazon.com, Crate & Barrel, Fortunoff, Sur La Table, Sherry-Lehmann, Zabar's

metrokane
World's leading line of wine accessories
See them all at Metrokane.com

Raven and the Box of Daylight

Raven took the sun from the Box of Daylight and put it in the sky to give us light.
Shown full size in sterling silver, gold available.
From our Northwest Coast Indian collection.

No. N967 Pendant, with 24" chain....$84
No. N967E Earrings, Fishhook....$52
Add $7 handling. Satisfaction guaranteed.

David Morgan
800-324-4934 davidmorgan.com
11812 N Creek Pkwy N, Ste 103 • Bothell WA 98011

GO WHERE THE BIG SHIPS CANNOT
VIRGINS • BAHAMAS • LEEWARDS

Unique small ship adventures to tropical islands and historic coastal waterways, usually only accessible by private yacht. Only 100 guests, casual, classic, BYOB, family operated, memorable camaraderie.

800-556-7450
★US FLAG★
AMERICAN CANADIAN CARIBBEAN LINE
www.accl-smallships.com

China, Crystal, Silver & Collectibles
Old & New • Buy & Sell
10 Million Pieces
183,000 Patterns
Call for **FREE** lists of each of your patterns.
1-800-REPLACE
(1-800-737-5223)
PO Box 26029, Dept. SM
Greensboro, NC 27420
www.replacements.com®
REPLACEMENTS, LTD.

MEN'S WIDE SHOES
EEE-EEEEEE
SIZES 5-15
FREE catalog
200 styles
HITCHCOCK SHOES, INC.
Dept. 21X Hingham, MA 02043
1-800-992-WIDE www.wideshoes.com

The ability to do factory work (above: in 1900) may have been enhanced by a genetic adaptation away from impulsivity toward steadiness, says one researcher.

evitably moved down the economic ladder, displacing poor families. And something of their privileged past went with them. "The attributes that would ensure later economic dynamism—patience, hard work, ingenuity, innovativeness, education—were thus spreading biologically throughout the population," Clark writes.

This change may well have been "completely cultural," Clark says. But he is clearly more interested in the possibility that Darwinian evolution—with disease, accidents and starvation driving less successful families onto the scrapheap of history—produced a genetic change in the British people, preparing them better than those of other nations for commercial success.

He readily acknowledges that the idea is fraught with difficulty. A faculty petition had just prompted his university to disinvite a scheduled speaker, economist and former Harvard president Larry Summers, because of Summers' profoundly controversial 2005 suggestion of a genetic difference in science aptitude between men and women. This all makes Clark uneasy, he says, because his book "suggests that there might be a genetic difference between Europeans and Australian aboriginals." Then he adds: "Not that Europeans are smarter, just that they may be better adapted to a capitalist society."

An adaptation that particularly interests Clark has to do with "time preference," which can take the form of patience and long-term planning in some people and an impulsive urge for immediate gratification in others. When forms of such a trait already exist in a population, Clark says, natural selection could rapidly make one form predominant, just as blue eyes or fair skin can come to predominate. Thus the surplus reproduction of the rich may have turned England into the birthplace of industrial manufacturing by replacing impulsive traits with the slow and steady. "It may just be the drudges that have been left," Clark says. (Maybe that's why the British became known as a "nation of shopkeepers.")

But why didn't the same kind of evo-

TIME LIFE PICTURES / GETTY IMAGES

lution take place in other countries? In China and Japan, the rich seem not to have been so fertile, Clark writes. (The historical data for India doesn't exist, as far as he knows.) Moreover, the population in China tripled in the centuries before the Industrial Revolution, and in Japan it quintupled. So natural selection may not have been killing off the poor quite so remorselessly as in Britain, where the size of the population remained the same.

Other scholars have praised the detailed research and ambitious scope of Clark's work. But they have also questioned whether genetic, or even cultural, transmission of behavioral traits from rich ancestors is enough to explain the Industrial Revolution. Economists still generally argue that good institutions are the primary factor in such big leaps forward, because they make people feel sufficiently secure to focus patiently on long-term gain. And recent evidence suggests that when institutions change, as they have in China, Japan and India, people there seem quite capable of adapting to capitalism.

THERE IS, HOWEVER, another way the rich may have helped make us who we are: by their knack for "extreme selfishness." Like many scholars, Brian Hayden, an archaeologist at Simon Fraser University in British Columbia, believed that leaders generally served the common good. Then he interviewed people in traditional Mayan villages about how their leaders had helped out during droughts and famines.

"I was completely blown away by the results," he recalled recently. "Instead of helping the community, people in power took advantage to sell food at exorbitant prices, or they hoarded food and wouldn't share it, or they used food in trade to take over land." In the ethnographic literature on traditional societies around the world, Hayden found frequent accounts of despots and psychopaths—leaders who took what they wanted even when it meant disaster for their neighbors. He came to think that the rich and powerful—his triple-A types—played a dual role in so-

Provide For Your Future And The Smithsonian's.

That's exactly what Gloria Hamilton is doing by making a Smithsonian charitable gift annuity.

"I had some stocks that were paying very little in dividends, but the capital gains tax on selling them would have been tremendous. I realized that creating a charitable gift annuity with the Smithsonian would work to benefit both of us."

Gloria Hamilton, a special friend who is thinking of the Smithsonian's future.

Advantages of a Smithsonian Gift Annuity include lifetime payments at attractive rates, plus significant tax benefits for your charitable contribution.

SAMPLE RATES
Effective July 1, 2006
(ONE BENEFICIARY)

Age 65	6.0%
Age 75	7.1%
Age 85	9.5%
Age 90+	11.3%

Smithsonian Institution
P.O. Box 37012 MRC 035
Washington, D.C. 20013-7012

Smithsonian Legacy Society
(888) 419-7584
e-mail: legacy@si.edu
www.si.edu/plangiv

❑ Send information on a Smithsonian Charitable Gift Annuity

Birthdates(s):_____

Amt: ❑ $10,000 ❑ $100,000 ❑ $50,000 ❑ _____

❑ I want to know more about gifts to the Smithsonian that provide me with income for life

❑ Send information on including the Smithsonian in my will

❑ I have already included the Smithsonian in my will

Name:_____

Address:_____

_____

Phone:_____

Smithsonian Legacy Society
P.O. Box 37012 • MRC 035
Washington, D.C. 20013-7012

PG7125M

ADVERTISEMENT

Culture SPOTTER

SMITHSONIAN'S GUIDE TO EVENTS, PROMOTIONS AND SPECIAL OFFERS

Visit CultureSPOTTER online at
www.smithsonian.com/culturespotter

Enjoy Travel that Transforms. Plan your next vacation to Vienna with the Globus family of brands and discover how a journey can truly enrich your life. Featuring over 300 destinations in 60 countries, no one delivers escorted tours, independent packages and river cruises better than the Globus family of brands.

www.TravelThatTransforms.com
800.250.7618

GLOBUS family of brands

GLOBUS. COSMOS. MONOGRAMS AVALON WATERWAYS

When you need a unique gift-giving idea go to the United States Mint. Our proof sets are pristine, untouched by human hands, and beautiful. All the coins have frosted and sculpted foregrounds and are struck as least twice for high, sharp relief. These gifts will be treasured for a lifetime.

www.usmint.gov
Genuinely Worthwhile
1(800) USA.MINT

Avanti Savoia
50 year old Balsamic Vinegar
www.avantisavoia.com

European Beret $12
100% Wool • One Size Fits All
Black, Navy, Brown, Red, Camel, Grey
Check or Credit Card w/Exp. Date.
Add $2 shipping plus $1 each additional
www.johnhelmer.com
John Helmer • Est. 1921 • (503) 223-4976
969 S.W. Broadway, Dept. S127 • Portland, OR 97205

AFRICA ◆ CHINA ◆ INDIA ◆ JAPAN ◆ NEPAL ◆ SRI LANKA ◆ TAIWAN
Since 1989
UPTON TEA IMPORTS
Purveyor of the World's Finest Teas
1-800-234-8327
www.uptontea.com
Free catalog listing over 320 varieties of garden-fresh, loose tea
34 A Hayden Rowe St.*Hopkinton, MA 01748

www.bowtieclub.com
for the finest silk bow ties available!
Call for a free catalog
1-888-BOW-TIES.
THE BOW TIE CLUB
www.bowtieclub.com

AUTHORS WANTED
Leading subsidy book publisher seeks manuscripts. Fiction, non-fiction, poetry, juvenile, religious, etc. New authors welcomed. For free 32-page illustrated guide-book TD-72 call 1-800-821-3990 or write to Vantage Press, 419 Park Ave S., New York, NY 10016

Norwich, Vermont
Stave PUZZLES
Handcrafting wooden jigsaw puzzles for over 30 years.
$95. - $4,000. *Free catalog.*
www.stavepuzzles.com 802-295-5200

If you are moving soon, please send an address label from a recent issue along with your new address to:

Smithsonian Membership Data-Center
P.O. Box 420312
Palm Coast, FL 32142-0312
or call:
1-800-766-2149

Hayden says that the status-grabbing, triple-A aggrandizers have created the world as we know it, but they've also caused "90 percent of the world's problems."

ciety. On one hand, they bent laws, exploited neighbors, seized every little advantage. On the other, their gaudy pursuit of status also made them role models who produced, or served as patrons for, all kinds of shiny new inventions.

Hayden's research focused on how "big men" in early cultures used feasts to build political alliances, arrange marriages or simply make lavish displays of wealth. Some feasts obliged rival leaders to return the honor—and generally one-up it. Other archaeologists regard the proliferation of feasts 10,000 or 12,000 years ago as a byproduct of the first successful attempts at domesticating crops. But Hayden argues that feasts may actually have *caused* the agricultural revolution. As in high society today, a brutally competitive round of feasts forced desperate hosts to seek ever fancier new foods and drinks—not only staples, but also delicacies. So they may have domesticated wheat not for bread, but for beer. They domesticated status foods, such as the chili pepper and the avocado. (Think guacamole.) They cultivated chocolate for the Mesoamerican rich.

Melinda Zeder, a specialist in the origins of agriculture at the Smithsonian National Museum of Natural History, dismisses this as the "food-fight theory." The idea that competitive feasting led to the domestication of plants and ani-

mals "doesn't work," she says. "It's wrong from beginning to end. It does not jibe with the archaeological record." Hayden counters that there is archaeological evidence for his ideas. Moreover, he says his emphasis on the importance of hierarchy makes perfect sense to people who have lived with triple-A types in traditional cultures. Only academics who believe in the egalitarian character of traditional societies "don't get it," he says. "They think it has to be for the common good."

Even if crediting the rich with the agricultural revolution seems like a stretch, Hayden has marshaled plenty of other evidence that triple-A types have repeatedly driven the development of new technologies for the purpose of displaying their prestige—textiles, for instance, and metalworking, glass, indoor plumbing and illuminated books. Then the sweaty mob imitates them, gradually figuring out how to make prestige items more cheaply and put them to practical use.

This may sound like trickledown theory revisited. Or like a new take on social Darwinism, the 19th-century idea that the strong somehow end up smarter, fitter, more deserving—and richer. But the new affluenza theorists say that they're just explaining the way things work, not defending it. Hayden concludes that the status-grabbing, triple-A aggrandizers have created the world as we know it. But in their other lives as pirates, these same people have caused "90 percent of the world's problems" with a casual tendency to "ruin the lives of others, erode society and culture, and degrade the environment."

If he's right, the moral of the story might go something like this: the next time you come face to face with the rich and powerful among us, do the right thing and say, "Thanks for the second-hand status symbols." Then run as fast as you can in the opposite direction.

RICHARD CONNIFF, *a longtime contributor, is the author of* The Natural History of the Rich: A Field Guide.

Top Cellar

You don't have to be an oenophile to love it.

CHILTON

Fine wood furniture.

866-883-3366 www.chiltons.com

SMITHSONIAN; December 2007; Volume 38, Number 9 SMITHSONIAN (ISSN 0037-7333) is published monthly by Smithsonian Business Ventures, 600 Maryland Ave. S.W., Suite 6001, Washington, D.C. 20024. Periodical postage paid at Washington, D.C. and additional mailing offices. POSTMASTER: send address changes to Smithsonian, P.O. Box 420312, Palm Coast, FL 32142-0312. Printed in the USA. Canadian Publication Agreement No. 40043911. Canadian return address: Brokers Worldwide, PO Box 1051, Fort Erie, ON L2A 6C7.

We may occasionally publish extra issues. ©Smithsonian Institution 2007. All rights reserved. Reproduction in whole or in part without permission is prohibited. Editorial offices are at MRC 513, P.O. Box 37012, Washington, D.C. 20013 (202-633-6090). Advertising and circulation offices are at 420 Lexington Ave., New York, NY 10170 (212-916-1300). **MEMBERSHIP DUES/ SUBSCRIPTION** Prices: All subscribers to SMITHSONIAN are members of the Smithsonian Institution. United States and possessions: $36 a year payable in U.S. funds. Canada add $13 (U.S. funds) for each year. Foreign add $26 (U.S. funds) for each year. Ninety-nine percent of dues is designated for magazine subscriptions. Current issue price is $4.99 (U.S. funds). Back issue price is $7.00 (U.S. funds). To purchase a back issue, please call or email John O'Hare at 212-916-1379 or johare@si.edu. **Mailing Lists:** From time to time we make our subscriber list available to companies that sell goods and services we believe would interest our readers. If you would rather not receive this information, please send your current mailing label, or an exact copy, to: Smithsonian, Mail Preference Service, P.O. Box 420311, Palm Coast, FL 32142-0311. **Subscription Service:** should you wish to change your address, or order new subscriptions, you can do so by writing SMITHSONIAN, P.O. Box 420311, Palm Coast, FL 32142-0311, or by calling 1-800-766-2149 (outside of U.S., call 1-386-447-2721).

Statement of ownership, management and circulation (required by 39 U.S.C. 3685) of *Smithsonian* published monthly by Smithsonian Business Ventures, Capital Gallery, Suite 6001, MRC 513, P.O. Box 37012, Washington, D.C., 20013-7012 for October 19, 2007. General business offices of the publisher are located at 600 Maryland Avenue S.W., Suite 6001, Washington, D.C. 20024. Name and address of publisher is Kerry Bianchi, Capital Gallery, Suite 6001, MRC 513, P.O. Box 37012, Washington, D.C., 20013-7012. Name and address of editor is Carey Winfrey, Capital Gallery, Suite 6001, MRC 513, P.O. Box 37012, Washington, D.C., 20013-7012. Owner is Smithsonian Institution, 1000 Jefferson Drive, Washington, D.C. 20560. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities: None. The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes have not changed during the preceding 12 months (Section 411.3, DMM). The average number of copies of each issue during the preceding 12 months are: a) Total number of copies printed: **2,129,285**; b) Paid and/or Requested Circulation: (1) Mailed Outside-Country Paid Subscriptions stated on PS Form 3526: **2,087,881**; (2) Mailed In-Country Paid Subscriptions stated on PS Form 3526: **0**; (3) Paid distribution outside the mails including sales through dealers and carriers, street vendors, counter sales and other paid distribution outside USPS®: **6,946**; (4) Paid distribution by other classes of mail through USPS®: **0**; (c) Total paid distribution: **2,094,827**. d) Free of nominal rate distribution: (1) Free of nominal rate outside-country copies included on PS Form 3526: **5,457**; (2) free or nominal rate in-country copies included on PS Form 3526: **0**; (3) free or nominal rate copies mailed at other classes through the USPS®: **0**; (4) free or nominal rate distribution outside the mail: **8,075**. Total free or nominal rate distribution: **13,532**. Total distribution: **2,108,359**. Copies not distributed: **20,926**. Total: **2,129,285**. Percent paid **99%**. The actual number of copies of single issue published nearest to filing date are: a) Total number of copies printed: **2,096,372**; b) Paid and/or Requested Circulation: (1) Mailed Outside-Country Paid Subscriptions stated on PS Form 3526: **2,063,032**; (2)Mailed In-Country Paid Subscriptions stated on PS Form 3526: **0**; (3) Paid distribution outside the mails including sales through dealers and carriers, street vendors, counter sales and other paid distribution outside USPS®: **6,000**; (4) Paid distribution by other classes of mail through USPS®: **0**; (c) Total paid distribution: **2,069,032**. d) Free of nominal rate distribution: (1) Free of nominal rate outside-country copies included on PS Form 3526: **5,496**; (2) free or nominal rate in-country copies included on PS Form 3526: **0**; (3) free or nominal rate copies mailed at other classes through the USPS®: **0**; (4) free or nominal rate distribution outside the mail: **7,572**. Total free or nominal rate distribution: **13,068**. Total distribution: **2,082,100**. Copies not distributed: **14,272**. Total: **2,096,372**. Percent paid **99%**. I certify that all information furnished is true and complete.

(Signed) Ed Dequina
Business Manager
Smithsonian Media Group

JOHN ⚓ CHRISTIAN
DESIGNERS & CRAFTSMEN

NUMEROS™ COLLECTION
ANNIVERSARY DATE
IN ROMAN NUMERALS!
December 11, 1998
XII XI MCMXCVIII
FROM $590

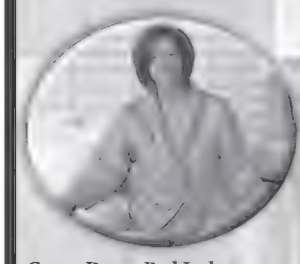
RAISED MONOGRAM · NAMES & DATE · CHILDREN'S NAMES & BIRTHSTONES · FAMILY CREST

ORDER BY DEC. 20TH FOR HOLIDAY DELIVERY!
FREE CATALOGUE
AVAILABLE IN STERLING, GOLD & PLATINUM
RINGBOX.COM 1.888.646.6466

Goose Down Robe

Supersoft easy care cotton fabric. Shawl collar and roll back cuffs. Cream, peach, bluette, white, navy, burgundy or teal. Sizes XS, S, M, L. Reg. $160, **Sale $89.95.** S&H $8.95. Matching Goose Down Slippers in sizes XS, S, M, L. Reg $38, **Sale $22.95.** S&H $4.95. Order by phone, Website or Mail. MC, Visa or Check. Call 415-472-2154 CA residents add 8.25% tax.

FREE SHIPPING & HANDLING when you purchase both Down Robe & Slippers.



Goose Down Bed Jacket. Avail. in same colors as Goose Down Robe, sizes XS, S, M, L. Reg. $90, **Sale $49.95.** S&H, $8.95.

WARM THINGS
180 Paul Dr., Dept. SO
San Rafael, CA 94903
415-472-2154
Ships within 48 hrs.
www.warmthingsonline.com

www.dallaspridgenjewelry.com
DALLAS PRIDGEN JEWELRY
One at a time, by hand

Rabbit Bracelet, 9 links Sterling silver $165, 14k Gold $595
Unconditionally guaranteed, 800-477-1856
104 N. Churton St, Hillsborough NC 27514

SPECIAL RESEARCH REPORT

30 DAY* FREE TRIAL

Effects of stress reversed by amazing new medical device.

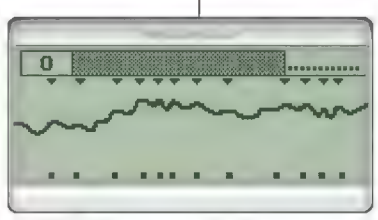
Now you can enjoy the pleasures of stress-free living and feel younger in just 15 minutes a day. It's surprisingly easy with the remarkable new medical device called the StressEraser.

This medical breakthrough actually reverses *ergotropic tuning;* the harmful process that causes your nerves to respond faster and more strongly to stress; making you feel it more easily, more quickly, more intensely.

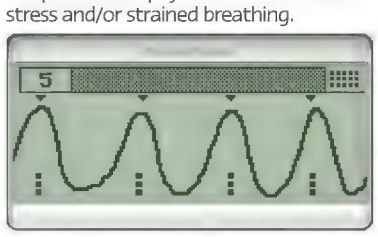
Medical Discovery Leads to Breakthrough in Reducing Stress.

Medical researchers now know that the harmful effects of *ergotropic tuning* are intricately connected to the biological mechanisms of breathing. More importantly, they learned that you can actually regulate the stress-producing activity of this system by regulating this basic bodily function.

To do this, Helicor, Inc. has developed the amazing StressEraser that measures the effects of breathing and guides the user to control this basic biological activity.



BEFORE: StressEraser indicators show the presence of physical and emotional stress and/or strained breathing.



AFTER 15 MINUTES: Harmful stress levels significantly reduced after using StressEraser cues to synchronize your breathing.

Compact and easy to use – takes just 15 minutes a day.

The StressEraser is designed to fit in the palm of your hand and is simple to operate. All it takes is a relaxing 15 minutes right before bed each night to adjust your breathing; then set it aside.

Your system will continue to reverse the effects of the stress you've built up all day – while you sleep!

Erase stress while you sleep and feel good again in 30 Days.*

Within two weeks you will begin to feel a difference all day long. And within a month, you will feel like you did when you were young, before the stresses caused by *ergotropic tuning,* became part of your life.

The StressEraser Guarantee:

Try the StressEraser before bed FREE for 30 nights and Helicor guarantees you will feel good again or simply return it. No questions asked.

"The StressEraser is a ground-breaking achievement in the area of stress reduction and biofeedback."

Robert Reiner, Ph.D.
Exec. Director, Behavioral Associates
Faculty, Dept. of Psychiatry, NYU Medical Center

"I tried it... a pretty remarkable tool."

MSNBC

"Now you don't have to use a $3000 machine at your doctor's."

Forbes

"You feel so relaxed yet focused."

ABC GOOD MORNING AMERICA

"9 out of 10"

WIRED

"...my forehead, neck and shoulders felt more relaxed"

The Washington Post

CALL NOW FOR YOUR
30 DAY FREE TRIAL*

866-892-9541
www.stresseraser.com

* If not completely satisfied, customer pays only for shipping and handling.

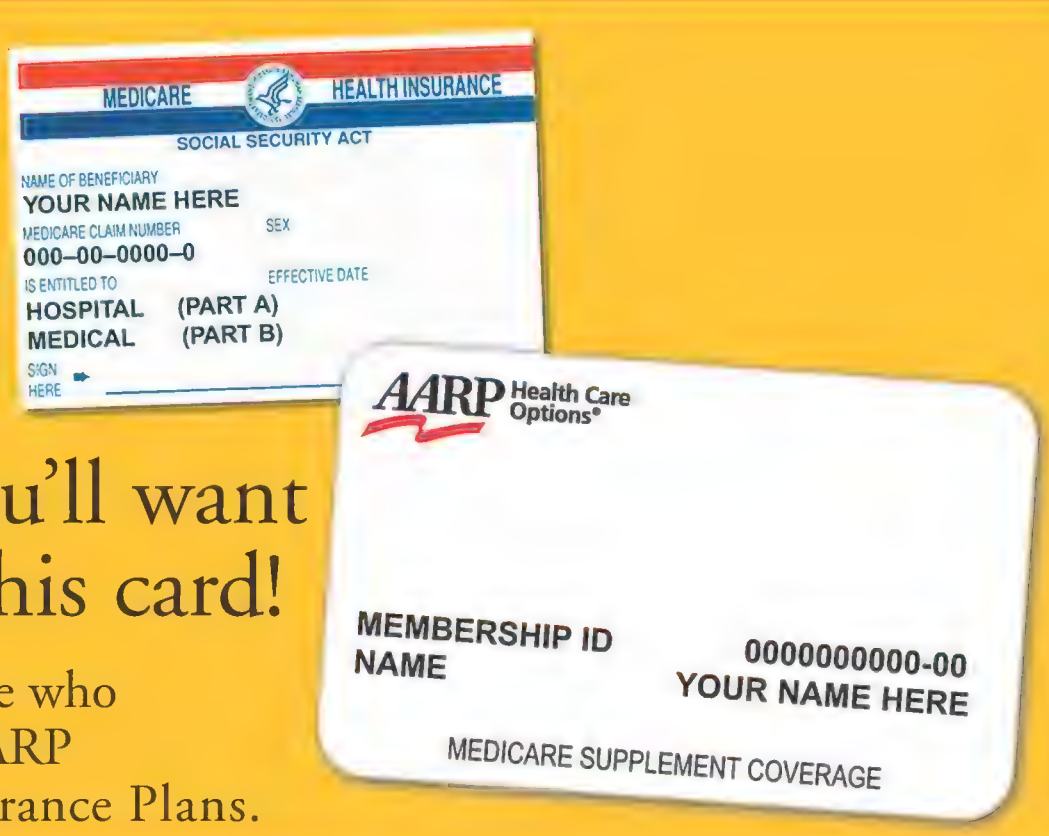
Free Trial of the StressEraser is available only on telephone orders.

STRESSERASER

Copyright © 2007, Helicor, Inc. Helicor, StressEraser, the StressEraser logo, BreathWave, and The Relaxing Nights Program are trademarks of Helicor. All rights reserved.

LAD-00070-RevC

If you carry this card...



You'll want this card!

Join over 2.5 million* people who have already enrolled in AARP Medicare Supplement Insurance Plans.

If you carry a Medicare Card, you'll want the AARP Medicare Supplement Insurance Plan card available through AARP Health Care Options.**

The average person on Medicare could end up spending thousands per year out of their own pocket.*** An AARP Medicare Supplement Plan, underwritten by United HealthCare Insurance Company,† helps cover you for some of what Medicare doesn't.

They're the only Medicare supplement insurance plans endorsed by AARP. That's why with AARP Medicare Supplement Insurance, you have a wide variety of plans to choose from, so you can find a plan that suits *your* needs.

Call and you'll receive a **FREE** AARP Medicare Supplement Information Kit, including benefits, costs, limitations, and exclusions. ***There's no obligation.***

*Based on 2005 United HealthCare Insurance Company Enrollment Data.

***Government Accountability Office (GAO); Report GAO-04-960, "Medicare Demonstration PPO's Financial and other Advantages for Plans, Few Advantages for Beneficiaries." Washington, DC, September 2004.

††United HealthCare Insurance Company pays a fee to AARP and its affiliates for use of the AARP trademark and other services. Amounts paid are used for the general purposes of AARP and its members.

AARP Medicare Supplement Insurance Plans are:

- ✔ **Endorsed by AARP††** — the organization you know and trust.
- ✔ **Easy to use** — choose your doctors, no referrals required, and virtually no claim forms to file.
- ✔ **Competitively priced** — AARP group rates are competitively priced. Plus, take advantage of available discounts.
- ✔ **Customer-focused** — our award-winning customer service staff will be happy to answer your questions.

AARP Health Care Options®
Medicare Supplement Insurance

INSURED BY
United HealthCare Insurance Company

Call toll-free:
1-866-270-3865, Ext. RSM

www.aarphealthcare.com/RSM

AARP APPROVED

AARP Health Care Options is the name of AARP's health insurance and service program. It is not the insurer. AARP contracts with insurers to make coverage available to AARP members. †Insured by United HealthCare Insurance Company (United), Fort Washington, PA (United HealthCare Insurance Company of New York [United], Islandia, NY for New York residents). Policy Form No. GRP79171 GPS-1(G-36000-4). United is not connected with or endorsed by the U.S. Government, the Federal Medicare Program, Social Security, or any other governmental agency. All certificates/plans may not be available in your state/area. In some states, plans may be available to persons eligible for Medicare by reason of disability.

AS535 C(8/06)

*Introducing the world's simplest, cell phone experience – with service as low as $10 a month**

It doesn't play games, take pictures, or give you the weather

NEW

The Jitterbug® developed with Samsung®.
It's the cell phone that's changing all the rules.

For people like me, who want a cell phone that's easy to use. Over the years, cell phones have become smaller and smaller with so many complicated features. They are harder to program and harder to use. But the Jitterbug® cell phone has simplified everything, so it's not only easy to use, it's easy to try. No crowded malls, no waiting in line, no confusing sales people, or complicated plans. Affordable and convenient cell phone service is only a toll-free phone call away.

Questions about Jitterbug? Try our pre-recorded Jitterbug Toll-Free Hotline **1-800-230-9045**

The new Jitterbug® cell phone makes calling simple!

- Available in OneTouch or Full Dial model
- Comes pre-programmed and ready to use right out of the box
- Large, bright, easy to see display and buttons
- Push "Yes" to call directly from your personal phone list
- An operator is always available to help you, and will call you by name
- Soft ear cushion and louder volume for better sound quality
- Separate Volume Up/Down button and Speaker phone button on cover of phone
- Hearing aid compatible
- Familiar dial tone confirms service (no other cell phone has this)
- Service as low as $10 a month*
- Access help wherever you go

Why pay for minutes you'll never use!		
	Simple 30 Plan†	Simple 60 Plan†
Monthly Price	$15.00	$20.00
Included Minutes/Month	30	60
Operator Assistance	24/7	24/7
911 Access	FREE	FREE
Long Distance Calls	No add'l charge	No add'l charge
Nationwide Coverage††	Yes	Yes
Trial Period	30 days	30 days

Available in a simple 12-button Dial phone and an even simpler 3-button OneTouch phone for easy access to the operator, the number of your choice, and 911.

Service as low as $10 a month and a friendly 30-day return policy.**
If you've ever wanted the security and convenience of a cell phone, but never wanted the fancy features and minutes you don't need… Jitterbug® is for you. Like me, you'll soon be telling your friends about Jitterbug®. Call now.

jitterbug® BY GREATCALL brought to you by firstSTREET® for Boomers and Beyond™
1998 Ruffin Mill Road
Colonial Heights, VA 23834

Jitterbug® Cell Phone Item# BU-4722
Call now for our lowest price.
Please mention promotional code 34354.
1-866-540-0297
www.jitterbugdirect.com

IMPORTANT CONSUMER INFORMATION: Subject to Customer Agreement, select calling plans, and credit approval. Other charges and restrictions may apply. Screen images simulated. Coverage and service not available everywhere. Copyright © GreatCall, Inc. Jitterbug and GreatCall are trademarks of GreatCall, Inc. Samsung is a registered trademark of Samsung Electronics America, Inc and its related entities. *Not including government taxes, assessment surcharges, and set-up fee. **Applies to phone and monthly service charges only, provided call time usage is less than 30 minutes and phone is in like-new condition. Usage charges may apply. †All plans require the purchase of a Jitterbug phone and a one-time set-up fee ($35). ††Jitterbug will work almost everywhere in the U.S. where cellular service is available from most of the major carriers.

47286 All rights reserved. © 2007 TechnoBrands®, Inc.

MACULAR DEGENERATION

Vision in Motion™

Discover the new VideoEye SideKick!™

Pivots effortlessly for comfortable use

Articulating camera arm positions easily

Magnifying side table ensemble adjusts to fit any recliner (not included)

Convenient remote control

Watch TV from cable or DVD

Magnifies reading and objects with large LCD screen

The Bandage T
FIRST AID ANTISEPTIC LIQ
New-Skin Spray is for larger
and arms. New-Skin dries ra
protective cover that is
waterproof and lets

The convenient VideoEye SideKick helps people with diminished vision continue to enjoy reading, TV and everyday tasks.

VideoEye!®

See what you've been missing™

www.videoeye.com

Call for free information!

1.800.416.0758

Receive Email and Photos Without a Computer

"My mother LOVES PRESTO! This is the best present I have ever given my mother. She has never touched a computer and has no interest in learning. She says that getting her Presto Mail is like someone coming to her house for a visit."

- Sherri M., Chicago, IL

"This is really neat. I'm sharing the pictures and the news of the family. I get things from my children and grandchildren. I can't tell you how much I like it. It's amazing."

-Nina J., Portland, OR

From: Ron
To: Sharon
August 12, 2006
Isabel's birthday party
Can you believe Isabel is already 5? A bunch of giggling, screaming little girls came over for her swimming party and then we had cake and presents. She loved the doll you sent her! Isabel insisted that I send you a photo from her party right away so she could call you and tell you about it. Here it is!
Love,
Sharon and Isabel
Laura & Dale's Wedding
Trick or Treat!
January

Presto... Helping Families Stay Close

"We are absolutely in heaven. It is keeping my mom in touch with the family. She was excited about it right from the beginning. We still use the phone like we used to, but now we can also send photos in a timely and easy manner. We don't have to put them in an envelope to mail and she doesn't have to go to the mailbox."

-Kimberly C., Boise, Idaho

"Presto prints my mail three times a day. I like Presto because I don't have to send the messages, just receive them."

-Gene R., Florida

"The greatest tool that I could have ever given my parents. They look forward to letters and pictures from my sisters and me, their 5 grandchildren and especially the pictures of the great grandkids. My dad told me yesterday that mom really enjoys all the mail she has received. Highly recommended with great ease of use. Marvelous idea!!"

–Glinda T., Fort Valley, Georgia

Easy for Everyone

Presto is so easy for everyone, including those who would never use a computer. It's as easy as plugging in a toaster. All they need is their existing phone line and an electrical outlet and they are connected to their entire family. Email and photos print out automatically in color.

Give someone you love the best present ever, Presto. Imagine how happy you'll make someone you love when they get colorful email and photos from you without the hassle and expense of a computer. Connect your whole family this holiday season with the Presto Service and the HP Printing Mailbox.

60 days - money back NO GUARANTEE RISK Satisfaction guaranteed

For a special money saving offer, call

(800) 591-9807

Toll-free, 24 hours a day

Ask about our 60-day money-back guarantee!

Or for more information, go to

www.presto46.com

399 W. El Camino Real
Mountain View, CA 94040

The Perfect Gift for Mom and Dad!

Presto

The HP Printing Mailbox

- *No PC*
- *No Internet connection*
- *No spam email*
- *Uses an existing phone line*
- *Prints automatically*

©2007 Presto Services Inc. "Presto", "You're Connected", and the Presto stylized logos, are service marks or registered service marks of Presto Services Inc. "HP" is a registered trademark of Hewlett-Packard Development Company, L.P.

"Nothing gets by an Oreck."
David Oreck, Founder.

Everyone knows an Oreck traps 99.9% of microbes. But then what?

Introducing the new Oreck XL® Ultra with IntellaShield™ Technology.

Now the hypo-allergenic Oreck XL Ultra vacuum is engineered with IntellaShield — a combination of two innovative technologies designed to give you the best protection against bacteria, mold, mildew, and foul odors. Microban®, an antimicrobial agent, is built right in to the vacuum. It actually penetrates microbes and disables their ability to reproduce and cause foul odors. Plus, enhanced odor controls eliminate pet odors and other stubborn smells so your home is fresher and cleaner than ever. And, since IntellaShield is engineered into the vacuum, you get a whole new level of clean with no extra effort. In fact, IntellaShield keeps working even when the vacuum is turned off. So you get Protection Beyond Clean.™

intellashield™
PROTECTION BEYOND CLEAN

The Oreck XL Ultra sports a 50% improvement in air filtration. It cleans in one pass and traps 99.9% of all harmful allergens down to 0.3 microns. (Bacteria measures 0.4 to 10 microns. Mold spores are 10 to 100 microns.)

On top of that the Oreck XL Ultra is incredibly lightweight and makes housework a breeze. All this and it uses about 1/3rd the electricity of virtually any other brand. That could save you hundreds of dollars in energy costs over the life of the vacuum. And it comes with a 10-year warranty and 10 free annual tune-ups, to keep it running like new.

Buy the Oreck XL Ultra with IntellaShield today, and get a $199 hypo-allergenic Housekeeper® Compact Canister for free. It's great for ceilings, furniture, closets, and it's a great car vac, too. It's Strong Enough To Pick Up A 16-lb. Bowling Ball.®

Try it for 30 days, risk-free, and get:

With purchase. Free $199 hypo-allergenic Super Deluxe Compact Canister–for everything above the floor.

Just for trying. Free $130 cordless Oreck Speed Iron.® Just mail in the voucher included with your Ultra.

Free shipping
A $29.95 value.

Call now
1-800-230-3741
Code: DL393

Click now
oreck.com/dec

ORECK

©2007 Oreck Direct, LLC. 100 Plantation Road, New Orleans, LA 70123.

*Purchase Price Same as Cash offer on approved Oreck PowerCard purchases. No down payment required, no finance charges if purchase paid in full in 12 months. If purchase not paid in full in 12 months or Account not kept current, Finance Charges assessed from purchase date and Minimum Monthly Payments required. Standard Rate 19.8% APR. Default Rate 23.8% APR. Minimum Finance Charge $2. Certain rules apply to the allocation of payments and Finance Charges on your promotional purchase if you make more than one purchase on your Oreck PowerCard. Call 1-888-367-4310 or review your cardholder agreement for information. Microban is a registered trademark of Microban Products Company. PCC6R

RESTAID™
HEALTHNEWS

Exhausted, But Just Can't Fall Asleep?

New breakthrough will help you fall asleep faster, sleep deeper and awake more refreshed.

Sleep is the only way we can recharge our brain and restore important neurotransmitters. Sleep is also the time when the body does most of its repair work including rebuilding and restoring muscle tissue. This is because growth hormones are secreted during sleep, which is essential to rebuilding tissues.

Consequences Of Too Little Sleep

There is a growing body of evidence indicating that chronic sleep deprivation increases risk of early death. In addition, one of the fastest growing areas of research is the link between chronic sleep deprivation and the risk of becoming overweight and obesity. Sleep deprivation can lead to:

- Greater risk of heart disease
- Increased risk of illness
- Thinking impairments, like slower reaction time, memory loss & confusion
- Poor work performance
- Mood problems like depression anger & irritability
- Risk of unhealthy weight gain & loss

"I used to lie in bed for hours and...toss and turn...I would only get 4-5 hours of sleep per night...which just wasn't enough for me. RestAid™ has seriously helped me. I can sleep without a problem and sleep soundly all night long. It has improved my life in so many ways."
—Maggie R.

Results not typical.

Lack Of Sleep Impacts 1 In 6 Adults

The National Sleep Foundation's Sleep in America polls reveal that over a six year period only about half of adults get a good night's sleep every night. Sleep deficit is frequently related to too much caffeine, nicotine and alcohol. It is also related to stress, long hours at work, night shifts and working on home computers before going to sleep.

"I had problems sleeping for several years but never wanted to take prescription meds because of possible side effects. I have taken RestAid™ every night for over two weeks, and I've never slept better. I fall asleep within a half hour of taking it, and I stay asleep longer. " —Scott M.

Results not typical.

New Non-Prescription Breakthrough

Before resorting to expensive prescription sleeping pills with potential negative side effects, try RestAid™. RestAid™ is an all-natural sleeping supplement that will help you fall asleep faster, sleep deeper and awake more refreshed.

RestAid™ utilizes a Patented Cysteine Milk Peptide® that is clinically proven to break down natural stimulants, toxic substances, alcohol and caffeine – all known to interrupt your sleep cycles. Its delivery system gets the nutrients into the blood stream much quicker than other supplements.

HOW RESTAID™ WORKS

RestAid™ contains the perfect combination of Cysteine Milk Peptide® and Melatonin. Cysteine Milk Peptide® counteracts toxins, stimulants and alcohol which disrupt sleep patterns and Melatonin works naturally to synchronize your body's sleep rhythm.

Cysteine Milk Peptide® – Shown in clinical studies to immediately boost levels of Glutathione, which is a substance produced by the body that is needed to break down toxins such as caffeine and alcohol that disrupt our natural sleep patterns.

Melatonin – is a hormone produced by the body that naturally increases sleep efficiency.

Vitamin B12 – is proven to cause an earlier release of Melatonin at night, which resets the sleep-wake cycle.

Lemon Balm Extract – is a natural sedative that soothes and relaxes your mind and body.

Hops Extract – is used as a natural treatment for tenseness & restless sleep.

Do You Need RestAid™?

- ☑ Hard time falling asleep?
- ☑ Can't sleep through the night?
- ☑ Concerned about the side effects of sleeping pills?
- ☑ Consistently wake up tired & foggy?
- ☑ Feel fatigued in the daytime?

Having Trouble Finding RestAid™?

For years consumers have only had the option of prescription pills or ineffective supplements to be able to get a good night's sleep! The manufacturers of RestAid™ are so confident in the results of RestAid™ that they are offering a 30-Day Risk Free Trial, so you can experience the results first hand!

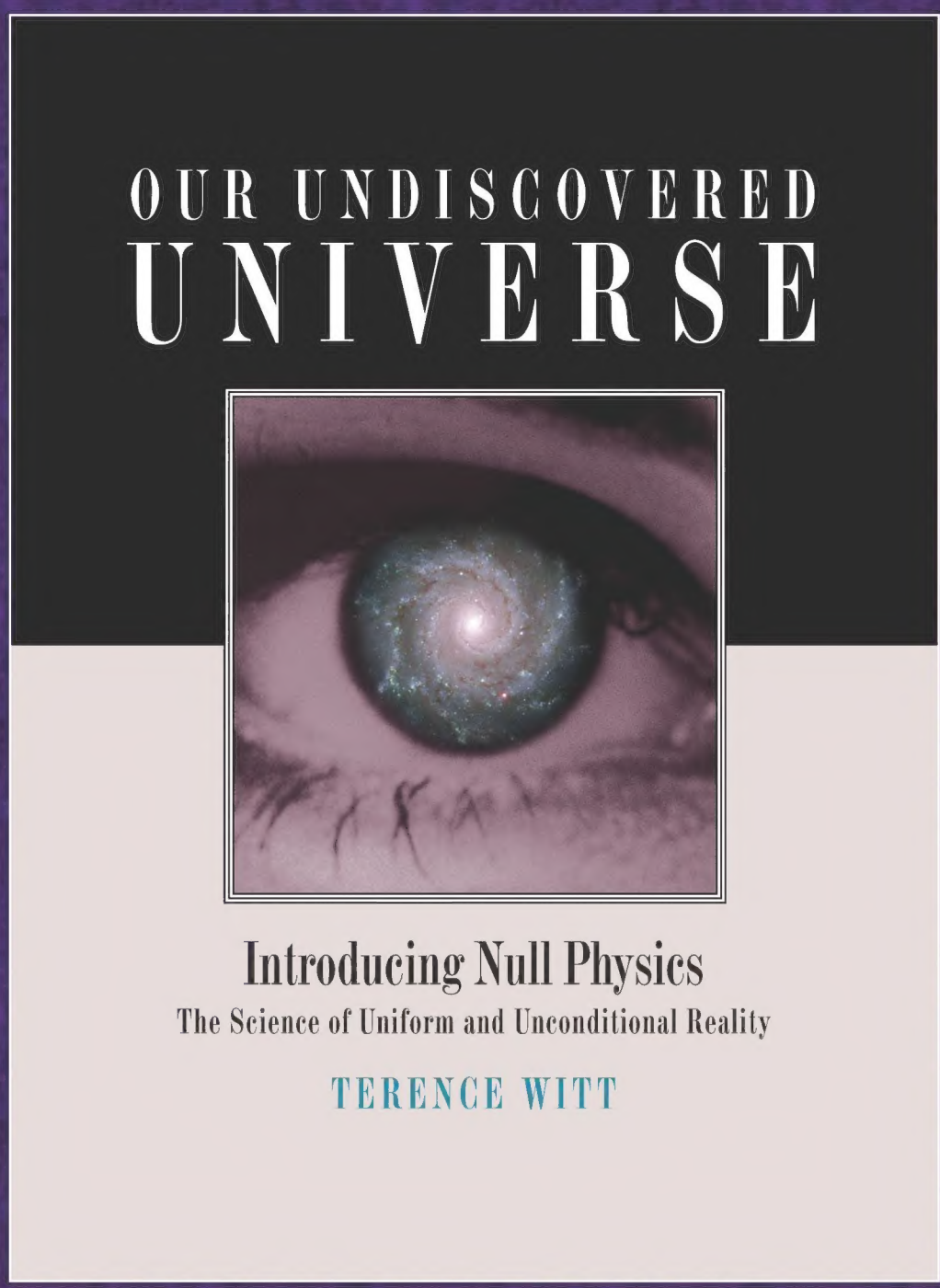
Call today to get your supply of RestAid™ Risk Free, for just a small S&H fee. Try this new all-natural breakthrough that will help you fall asleep faster and awake more refreshed.

Call to get your RestAid™ 30-Day Risk Free Trial Offer!

800-488-4816

Mention Code for FREE Upgrade! 2RSN61A

www.RestAidDirect.com



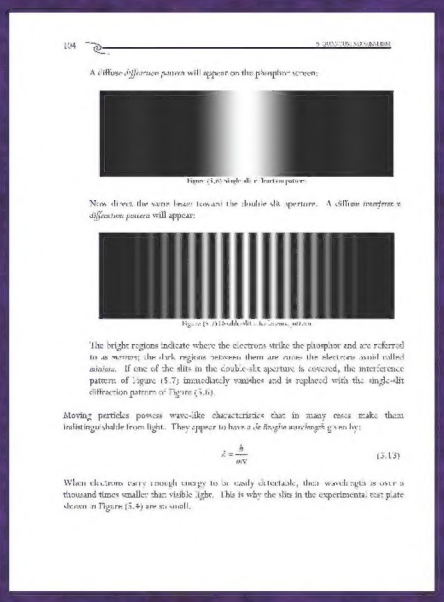
Physicists sometimes wonder if a new theory might emerge that makes quarks, the Big Bang, and superstrings completely obsolete.

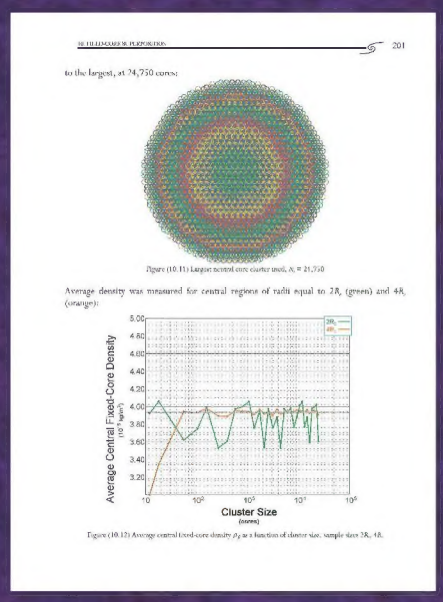
They don't need to wonder anymore.

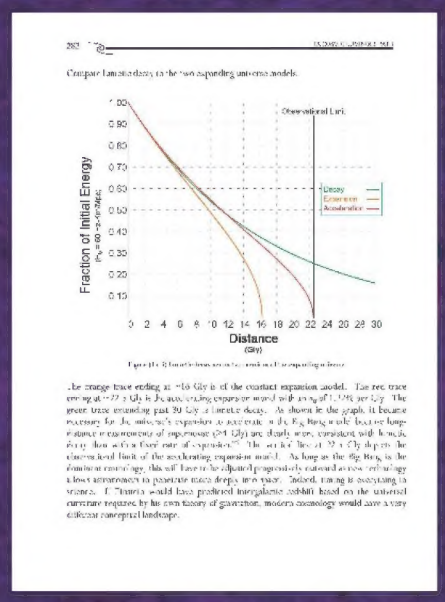
Our Undiscovered Universe probes nature's secrets with a depth and clarity never before imagined.

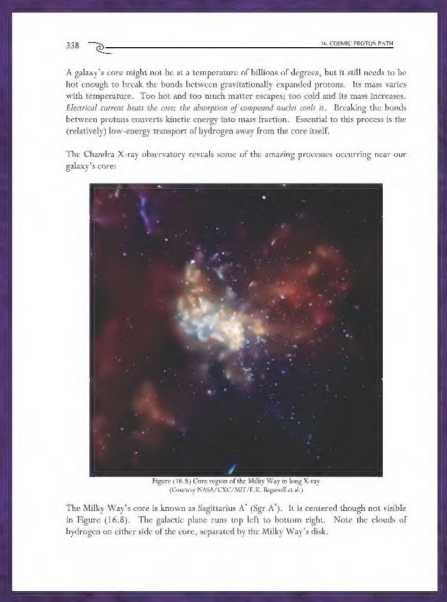
- *Unified*
- *Rational*
- *Revolutionary*
- *Empirically validated*

100 years ago, Einstein found a small part of the universe's four-dimensional geometry. Null Physics reveals the rest of it.









Are you ready for an incredible journey?

nullphysics.com

479 pages, hardcover with dust jacket, $59. Available at nullphysics.com. © 2007 Aridian Publishing Corporation, (877) 274-3426

There is a natural law that determines the results of people's behavior and defines the two choices of behavior that people can make—despite all beliefs to the contrary. Those choices are:

1. Conform to all the natural laws provided by whoever or whatever created natural laws.
2. Disobey any natural law and face failure, injury, or death.

Richard W. Wetherill
1906-1989

For several years, our one-page advertisements have appeared in national publications, explaining ***nature's behavioral law of absolute right***. The law was identified by the late Richard W. Wetherill and is described in his book *Tower of Babel* published on January 2, 1952.

Nature's behavioral law requires people to think and act in a way that is logical, appropriate, and moral. In other words, ***whoever or whatever created natural laws intends people to behave rationally and honestly rather than in ways that cause chaos and suffering for the entire human race.***

Lacking that knowledge, people have felt free to fight for peace, pollute the environment, abuse children, engage in incredible dishonesty, and in other ways behave outrageously.

Choice 1 provides the guidance enabling people to experience unprecedented joy and success with all their relationships and endeavors. Choice 2 causes every destructive result for a person who does not conform to a self-enforcing, natural law.

In general, people tend to blame outside factors when they get wrong behavioral results, as comparatively few have known what causes them. Getting that few pioneers to conform to the behavioral law, despite criticism from family and friends, took nearly half a century.

They found that conforming to the law was truly liberating and dealt with situations formerly labeled "cause unknown." The thinking that causes such situations can be released when it is properly identified. Keep in mind that the organ of thought inside our heads controls bodily functions, and unless irrevocable damage has already occurred, those unknown causes can become known, and then eliminated.

The evidence is that people would often prefer to die rather than to face the fact that their conscious and unconscious wrong thinking could be ruining their lives.

People understand that they must conform to laws of physics and sometimes resist learning of the law of right behavior because its implications clearly show that the majority of people's problems and trouble are self-inflicted.

Inasmuch as it usually takes a calamity to get the public's attention for a needed behavioral change, this advertising is intended to draw attention to the calamity that has long been accepted as just a part of life.

Have you ever questioned why people are born to die? Are they born to die or instead are they born to live rational, honest lives? Would a creator of life destroy life? Creation calls for the continuance of life; not for its destruction.

This writing attempts to explain that natural laws provide guidance for people's robust health, congenial relationships, and successful activities.

As we conform to each of creation's laws, whatever results extends that law's creative intent. When we act on our motivation based on wants and don't wants, likes and dislikes, the intent of creation is blocked; and it is the blocker who suffers. A lifetime of blocking the intent of nature's behavioral law ultimately causes the seemingly inevitability of a person's death. As people drop human motivation and adopt the intent of creation's behavioral law, they begin serving the true purpose for their existence!

Visit our Website www.alphapub.com to learn more. To speak with someone about books or request a free mailing or discuss the law, call 800.992.9124. If you reach voice mail, slowly spell your name and address and mention the specific publication where you learned about The Alpha Publishing House. Or write to us at 1101 Enterprise Dr., PO Box 255, Royersford, PA 19468-0255. Our mailing list is never distributed.

Text by E. Marie Bothe, President of The Alpha Publishing House.

Now You Can Decode the Mysterious History of Numbers

Join an Award-Winning Professor on This Fascinating Journey in 24 Lectures

Numbers surround us. They mark our days, light our nights, foretell our weather, and keep us on course. They drive commerce and sustain civilization. But what are they?

"Numbers are both practical and abstract," notes mathematician Edward B. Burger. "They are important in our everyday world, but remain mysterious in our imaginations." **Zero to Infinity: A History of Numbers** will not only give you the full and detailed story of how and why numbers are important; it will introduce you to their enduring mystery.

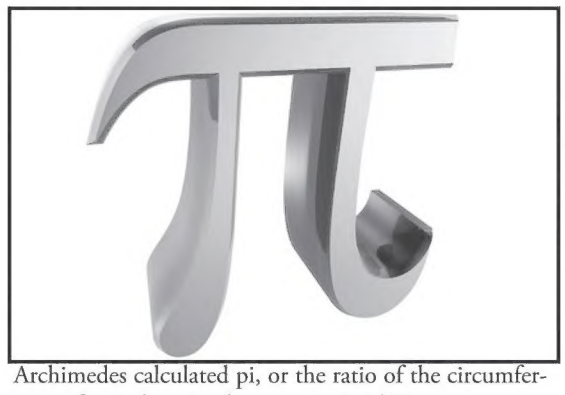
In addition, you'll encounter Harpo, Chico, and Groucho in an entirely new context; learn about the intimate relationship between mathematics and love, honor, disgrace, and resurrection; and swim around in the Jello-bowl of pure mathematics.

Whether you barely struggled through algebra or you majored in mathematics, you will find Professor Burger's approach accessible and stimulating. If you think math is nothing but problem-sets and formulas, prepare to be amazed. This passionate and brilliant teacher will cast new light on the familiar and understandable and expand your grasp of the elegant and complex.

When you finish this course, you will truly understand what mathematicians mean when they talk about beauty and elegance. Professor Burger offers convincing evidence that mathematicians are both artists and explorers, and he presents you with an illuminating and lively atlas of the realms of number they've imagined and discovered. After you've taken this course, you'll agree that the areas covered here have changed your ideas about mathematics.

About Your Professor

Edward B. Burger is Professor of Mathematics in the Department of Mathematics and Statistics at Williams College. He earned a B.A. with distinction in Mathematics from Connecticut College (summa cum laude) and his Ph.D. in Mathematics from The University of Texas at Austin. He is the recipient of numerous honors, including the prestigious Chauvenet Prize presented by the Mathematical Association of America, and a variety of teaching awards.



© sgame, 2007. Used under license from Shutterstock, Inc.

Archimedes calculated pi, or the ratio of the circumference of a circle to its diameter, as 3.1418.

About The Teaching Company

We review hundreds of top-rated professors from America's best colleges and universities each year. From this extraordinary group, we choose only those rated highest by panels of our customers. Fewer than 10% of these world-class scholar-teachers are selected to make The Great Courses.

We've been doing this since 1990, producing more than 3,000 hours of material in modern and ancient history, philosophy, literature, fine arts, the sciences, and mathematics for intelligent, engaged, adult lifelong learners. If a course is ever less than completely satisfying, you may exchange it for another, or we will refund your money promptly.

THE TEACHING COMPANY®
The Joy of Lifelong Learning Every Day™
GREAT PROFESSORS, GREAT COURSES, GREAT VALUE GUARANTEED.™

Lecture Titles

1. The Ever-Evolving Notion of Number
2. The Dawn of Numbers
3. Speaking the Language of Numbers
4. The Dramatic Digits—The Power of Zero
5. The Magical and Spiritual Allure of Numbers
6. Nature's Numbers—Patterns without People
7. Numbers of Prime Importance
8. Challenging the Rationality of Numbers
9. Walk the (Number) Line
10. The Commonplace Chaos among Real Numbers
11. A Beautiful Dusting of Zeroes and Twos
12. An Intuitive Sojourn into Arithmetic
13. The Story of π
14. The Story of Euler's e
15. Transcendental Numbers
16. An Algebraic Approach to Numbers
17. The Five Most Important Numbers
18. An Analytic Approach to Numbers
19. A New Breed of Numbers
20. The Notion of Transfinite Numbers
21. Collections Too Infinite to Count
22. In and Out—The Road to a Third Infinity
23. Infinity—What We Know and What We Don't
24. The Endless Frontier of Number

About Our Sale Price Policy

Why is the sale price for this course so much lower than its standard price? Every course we make goes on sale at least once a year. Producing large quantities of only the sale courses keeps costs down and allows us to pass the savings on to you. This also enables us to fill your order immediately: 99% of all orders placed by 2 pm eastern time ship that same day. Order before February 1, 2008, to receive these savings.

SAVE $185!
OFFER GOOD UNTIL FEBRUARY 1, 2008

1-800-TEACH-12 (1-800-832-2412)
Fax: 703-378-3819

Special offer is available online at
www.TEACH12.com/7st

Order **Zero to Infinity: A History of Numbers**, which consists of 24 half-hour lectures and Course Guidebooks.

Priority Code 26113

DVD $69.95 (std. price $254.95) **SAVE $185!**
plus $10 shipping, processing, and Lifetime Satisfaction Guarantee

* Non-U.S. Orders: Additional shipping charges apply.
For more details, call us or visit the FAQ page on our website.
**Virginia residents please add 5% sales tax.

Offer Good Through: February 1, 2008

The Great Courses®
THE TEACHING COMPANY®
4151 Lafayette Center Drive, Suite 100
Chantilly, VA 20151-1232 USA

Call for a FREE Catalog (1-800-832-2412). More than 200 courses are available on DVD, CD, or Audiotape.

Domestic Bliss

The Kama Sutra of Housework **BY DAVID MARTIN**

Men are beginning to understand that doing housework . . . unprompted goes a long way to creating marital happiness. . . . Intimacy is not just for the bedroom, in other words. Foreplay can begin with a dish towel. —The Toronto *Globe and Mail*

Thus follows the Kama Sutra of Domestic Love:

ON THE USE OF OUTSIDE HELP

In an effort to enhance domestic congress, some couples may seek the services of one professionally trained in the art. However, this is seldom as satisfying as when the man performs the task alone. But in the interest of matrimonial harmony, if both the man and the woman work outside the home, it is acceptable to engage a cleaning person once every two weeks.

THE WASHING OF DISHES

The woman submerges her dishes in warm, soapy water, rinses them in clear water and passes them to the man. The man employs a slow, clockwise motion to dry them thoroughly with a dish towel. After about 20 minutes, the solicitous partner will switch roles for variety.

ON DOING LAUNDRY

The man is often too hurried and wishes to place the clothes immediately in the washing machine. He must learn patience and be guided by the woman, who will teach him the art of sorting and, in time, even to pre-soak. The slow, deliberate dividing of clothing into piles of whites, lights and colors will lighten the loads and heighten the pleasure.

THE ART OF THE DRYER

Once the man has mastered the washing routine, he can be introduced to the dryer. Again, he must act against his nature and learn patience before inserting damp garments into the cylinder. Although all items can be placed into the dryer, he must learn to withhold some of them. What could be a most pleasurable cycle can end in anger and disappointment for the woman if a delicate undergarment is shredded or blue jeans are shrunk.

ON EXTRACTING DIRT FROM THE CARPET

This is an uncommon task for a man. Before he can perform the act he must first be alerted to the existence of dirt in the carpet. Once introduced to the vacuum cleaner, its mechanical nature may overexcite him and cause him to proceed with inappropriate haste. The woman must also ensure that he is schooled in which attachment to use for each task.

RICHARD THOMPSON

THE CLEANING OF THE BATHROOM

Most men are unfamiliar with this delicate maneuver and may initially resist. A woman should not expect too much at first, taking initial satisfaction from the man's cursory sponging of the sink and tub before he advances to the washing of the floor and the polishing of taps. Be aware that he will not readily clean the bowl. But if a wise woman knows how to reward her mate, she may never have to use a toilet brush again.